10/529169 JC06 Rec'd PCT/PTO 24 MAR 2005

SEQUENCE LISTING

<110>	CID Co., Ltd. and Lee, Seung Han	
<120>	Novel full-length genomic RNA of Japanese encephalitis virus and infectious JEV cDNA therefrom, and use thereof	
<130>	3fpo-06-03	
<150>	KR 2002-61589	
<151>	2002-10-09	
<160>	67	
<170>	Kopatentin 1.71	
<210>	1	
<211>	18	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	primer J7, complementary to nt 3986-4004 of the JEV genome	
<400>	1	
	ga ctggcatg	18
.040-		
<210>	2	
<211>	28	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	primer J8, complementary to nt 1-18 of the JEV genome	

gatcggace	cg agaagtttat ctgtgtga	28 .
<210>	3	
<211>	21	
<212>	DNA	
	Artificial Sequence	
<220>		
<223>	primer J6, complementary to nt 3845-3865 of the JEV genome	
<400>	3	
gcccctag	ga ccagaaccac g	· 21
<210>	4	
<211>	21	
<212>		
<213>		
	·	
<220>		
<223>	primer J4, complementary to nt 8150-8170 of the JEV genome	
. 400:		
<400>	4	21
aggacgcg	ata gtgtgcgttg t	۷1
<210>	5	
<211>	18	
<212>	DNA	

<400>

<213>

Artificial Sequence

```
<220>
         primer J20, complementary to nt 3266-3283 of the JEV genome
<223>
<400>
         5
                                                                           18
aaaccaggga ccttggga
<210>
         6
<211>
         21
<212>
         DNA
<213>
         Artificial Sequence
<220>
         primer J1, complementary to nt 10947-10967 of the JEV genome
<223>
<400>
         6
                                                                       21
gatcctgtgt tcttcctcac c
         7
<210>
<211>
          27
<212>
          DNA
<213>
          Artificial Sequence
<220>
          primer J12, complementary to nt 7565-7582 of the JEV genome
<223>
<400>
          7
                                                                          27
gateggaceg aattecacea eageeae
```

<210>

<211>

8

<212> DNA <213> **Artificial Sequence** <220> <223> primer J2, complementary to nt 10870-10893 of the JEV genome <400> 8 24 agaagatctc ccagtctatt ccca <210> 9 <211> 10818 <212> DNA <213> Japanese encephalitis virus <400> 60 agagattagt gcagtttaaa cagttttta gaacggaaga taaccatgac taaaaaacca 120 ggagggcccg gtaaaaaccg ggctatcaat atgctgaaac gcggcctacc ccgcgtattc 180 ccactagtgg gagtgaagag ggtagtaatg agcttgttgg acggcagagg accagtacgt 240 ttegtgetgg etettateae gttetteaag tttacageat tageecegae eaaggegett 300 ttaggccgat ggaaagcagt ggaaaagagt gtggcaatga aacatcttac tagtttcaaa cgagaacttg gaacactcat tgacgccgtg aacaagcggg gcagaaagca aaacaaaaga 360 420 ggaggaaatg aaggctcaat catgtggctc gcgagtttgg cagttgtcat agcttgtgta ggagccatga agttgtcaaa tttccaaggg aagcttttga tgaccattaa caacacggac 480

attgcagacg tcatcgtgat tcctacctca aaaggagaga acagatgctg ggtccgggca

atcgatgtcg gctacatgtg tgaggacact atcacgtacg aatgtcctaa gcttaccatg

540

ggcaatgatc cagaggatgt ggattgctgg tgtgacaacc aagaagtcta cgtccaatat	660
ggacggtgca cgcggaccag gcattccaag cgaagcagga ggtccgtgtc ggtccaaaca	720
catggggaga gttcactagt gaataaaaaa gaggcttggc tggattcaac gaaagccaca	780
cgatatctca tgaaaactga gaactggatc ataaggaatc ctggctatgc tttcctggcg	840
geggtacttg getggatget tggeagtaac aatggteaac gegtggtgtt taccateete	900
ctgctgttgg tcgctccggc ttacagtttt aattgtctgg gaatgggcaa ccgtgacttc	960
atagaaggag ccagtggagc cacttgggtg gacttagtgc tagaaggaga tagctgcttg	1020
acaatcatgg caaacgacaa accaacattg gacgtccgca tgattaacat cgaagccagc	1080
caacttgctg aggtcagaag ctattgctat catgcttcag tcactgacat ctcgacggtg	1140
gctcggtgcc ccacgactgg agaagcccac aacgagaagc gagctgatag tagctatgtg	1200
tgcaaacaag gtttcactga tcgtgggtgg ggcaacggat gtggactttt cgggaaggga	1260
agcattgaca catgtgcaaa attctcctgc accagtaagg cgattgggag aacaatccag	1320
ccagaaaaca tcaaatacga agttggcatt tttgtgcatg gaaccaccac ctcggaaaac	1380
catgggaatt attcagcgca agtaggggcg tcccaggcgg caaagtttac agtaacaccc	1440
aatgctcctt cgataaccct caaacttggt gactacggag aagtcacact ggactgtgaa	1500
ccaaggagtg gactgaacac tgaagcgttt tacgtcatga ccgtggggtc aaagtcattt	1560
ctggtccata gggaatggtt tcatgacctc gctctcccct ggacgtcccc ttcgagcaca	1620
gcgtggagaa acagagaact cctcatggaa tttgaagagg cgcacgccac aaaacagtcc	1680

1740 gttgttgctc ttgggtcaca ggaaggaggc ctccatcagg cgctggcagg agccatcgtg 1800 gtggagtact caagctcagt gaagttaaca tcaggccacc tgaaatgtag gctgaaaatg gacaaactgg ctctgaaagg cacaacctat ggcatgtgta cagaaaaatt ctcgttcgcg 1860 1920 aaaaatccgg cggacactgg ccacggaaca gttgtcattg aactctccta ttctgggagt 1980 gatggccct gcaaaattcc gattgtctcc gttgcgagcc tcaatgacat gacccccgtt 2040 gggcggctgg tgacagtgaa ccccttcgtc gcgacttcca gtgccaactc aaaggtgctg 2100 gtcgagatgg aaccccctt cggagactcc tacatcgtag ttggaagggg agacaagcag 2160 atcaaccacc attggcataa agctggaagc acgctgggca aggcttttc aacaactttg 2220 aagggagete aaagaetgge agegttggge gacacageet gggaetttgg etetattgga 2280 ggggtcttca actccatagg aaaggccgtt caccaagtgt ttggtggcgc tttcagaaca 2340 ctctttgggg gaatgtcttg gatcacacaa gggttaatgg gtgccctact actctggatg 2400 ggcatcaacg cacgagatcg atcaattgct ttggccttct tggccacagg aggtgtgctc 2460 gtgttcttag cgaccaatgt gcatgctgac actggatgtg ccattgacat cgcaagaaaa 2520 gagatgagat geggaagtgg catettegtg cacaacgaeg tggaageetg ggtggatagg 2580 tataaatatt tgccagaaac gcccagatcc ctagcgaaga tcgtccacaa agcgcacaag 2640 gaaggcgtgt gcggagtcag atctgtcact agactggagc accaaatgtg ggaagccgtg cgggacgaat tgaacgtcct gctcaaagag aatgcagtgg acctcagtgt ggttgtgaac 2700 aagcccgtgg ggagatatcg ctcagcccca aaacgcctgt ccatgacgca agagaagttt 2760

gaaatgggct ggaaagcatg gggaaaaagc attetetttg eeeeggaatt ggetaactee	2820
acatttgttg tagatggacc tgagacaaag gaatgtcctg atgagcacag agcctggaac	2880
agcatgcaaa tcgaagactt cggctttggt atcacatcaa cccgtgtgtg gctgaagatt	2940
agagaggaaa gcactgacga gtgtgatgga gcgatcatag gcacagctgt caaaggaca	t 3000
gtggcagttc atagtgactt gtcgtactgg attgagagtc gctacaacga cacatggaaa	3060
cttgagaggg cagtctttgg agaggtcaaa tcttgcactt ggccagagac acacactctt	3120
tggggagatg gtgttgagga aagtgaactc atcatcccgc ataccatagc cggaccaaaa	3180
agcaagcaca atcggaggga agggtacaaa acacaaaacc agggaccttg ggacgaa	aac 3240
ggcatagtct tggactttga ttattgccca gggacaaaag tcaccatcac agaggattgt	3300
ggcaagagag gcccttcggt cagaaccact actgacagtg gaaagttgat tactgactgg	3360
tgctgtcgca gttgctccct tccgccccta cgattccgga cagaaaatgg ctgctggtac	3420
ggaatggaaa tcagacctgt taggcatgat gaaacaacac tcgtcagatc acaggttgat	3480
gctttcaatg gtgaaatggt tgaccctttt cagctgggcc ttctggtgat gtttctggcc	3540
acccaggagg teettegeaa gaggtggaeg geeagattga ceatteetge ggttttgggg	3600
gccctgcttg tgctgatgct tgggggcatc acttacactg atttggcgag gtatgtggtg	3660
ctagtcgctg ctgctttcgc agaggccaat aatggaggag acgtcctgca ccttgctttg	3720
attgccgttt ttaagatcca accagctttt ctagtgatga acatgcttag cacgagatgg	3780
acgaaccaag aaaacgtggt cctggtccta ggggctgcct tctttcaatt ggcctcagta	3840

gatetgeaaa teggagteea eggaateetg aatgeegeeg etatageatg gatgattgtt 3900 3960 cgagcgatca ccttccccac aacctcctcc gtcaccatgc cagtcttagc gcttctaact ccgggaatga gggctctata cctagacact tacagaatca tccttctcgt catagggatt 4020 tgctccctgc tgcaagagag gaaaaagacc atggcaaaaa agaaaggagc tgtactcttg 4080 ggcttagcgc tcacatccac tggatggttc tcgcccacca ccatagctgc tggacttatg 4140 4200 gtctgcaacc caaacaagaa gagagggtgg ccagctactg agtttctgtc ggcagtcgga ttgatgtttg ccatcgtagg tggtttggcc gagttggata ttgaatccat gtcaataccc 4260 ttcatgctgg caggtcttat ggcagtgtcc tacgtagtgt caggaaaagc aacagatatg 4320 4380 tggctcgaac gggccgccga catcagctgg gagatggatg ctgcaatcac aggaagcagt 4440 cggaggctgg atgtgaaact ggatgatgac ggagattttc acttgattga tgatcccggc 4500 gttccatgga aagtttgggt cttgcgcatg tcttgcattg gcttagccgc cctcacgcct 4560 tgggccattg ttcccgccgc tttcggttac tggctcactt taaaaacaac aaaaagaggg 4620 ggcgtgtttt gggacacgcc atccccgaaa ccttgcttaa aaggagacac cactacagga 4680 gtctaccgaa tcatggctag agggattctt ggcacctacc aggctggcgt cggagtcatg tacgagaatg ttttccacac actatggcac acaactagag gggcagccat tatgagtgga 4740 4800 gaaggaaaat tgacgccata ctggggtagc gtgaaagaag accgcatagc ttacggaggc 4860 ccatggagat ttgatcgaaa atggaatgga acagatgacg tgcaagtgat cgtggtagaa 4920 ccggggaagg ctgcggtaaa catccagaca aaaccaggag tgtttcggac ccccttcggg

4980 gaggttgggg ctgttagcct ggattacccg cgaggaacat ccggctcacc cattctggat 5040 tccaatggag acatcatagg cctatacggc aatggagttg agcttggcga tggctcatac 5100 gtcagcgcca tcgtgcaggg tgaccgtcag gaggaaccag tcccagaagc ttacactcca 5160 aacatgttaa gaaagagaca gatgactgtg ttagatttgc accctggttc agggaaaacc 5220 aggaaaattc tgccacaaat aattaaggat gcaatccagc agcgcctaag aacagctgtg 5280 ttggcaccga cgcgggtggt agcagcagaa atggcagaag ctttgagagg gctcccagta 5340 cgataccaaa cttcagcagt gcagagagag caccaaggga atgaaatagt ggatgtgatg tgccacgcca ctctgaccca cagattgatg tcaccgaaca gagtgcccaa ctacaatcta 5400 5460 tttgtcatgg atgaagctca tttcaccgac ccagccagca tagccgcacg aggatacatc 5520 gctaccaagg tggaattagg agaggcagca gccatcttta tgacagcgac cccgcctgga 5580 accacggate etttteecga etcaaatgee ecaateeatg atttacaaga tgagatacea gacagggcat ggagcagtgg atacgaatgg atcacagaat atgcgggtaa aaccgtgtgg 5640 5700 tttgtggcga gcgtaaaaat ggggaatgag attgcaatgt gcctccaaag agcgggaaaa aaggtcatcc aactcaaccg caagtcctat gacacagaat acccaaaatg taagaatgga 5760 5820 gactgggatt ttgtcattac caccgacatc tctgaaatgg gggctaactt cggtgcgagc 5880 agggtcatcg actgcagaaa gagcgtgaaa cccaccatct tagaagaggg agaaggcaga 5940 gtcatcctcg gaaacccatc tcccataacc agtgctagcg cagctcaacg gaggggcaga 6000 gtaggcagaa accccaacca agttggagat gaataccatt atggaggggc taccagtgaa

6060 gatgacagta acctagccca ttggacagag gcaaagatca tgttagacaa catacacatg 6120 cccaatgggc tggtggccca gctctatgga ccagagaggg aaaaggcttt cacaatggat 6180 ggcgaatacc gtctcagggg tgaagaaaag aaaaacttct tagagctgct taggacggct 6240 gaccttccgg tgtggctggc ctataaggtg gcgtccaatg gcattcagta caccgacaga 6300 aagtggtgtt ttgatgggcc gcgcacgaat gccatactgg aggacaacac cgaggtagag 6360 atagtcaccc ggatgggtga gagaaagatc ctcaagccga gatggcttga tgcaagagta 6420 tacgcagatc accaagccct caagtggttc aaagactttg cagcaggaaa gagatcggcc 6480 gttagcttca tagaggtgct cggtcgcatg cctgagcatt tcatgggaaa gacgcgggaa 6540 gctttagaca ccatgtactt ggtcgcaacg gctgagaaag gtgggaaggc acaccgaatg 6600 gctctcgaag agttgccgga tgcactggaa accatcacac ttattgttgc catcactgta 6660 atgacaggag gattcttcct actaatgatg cagcgaaagg gtatagggaa gatgggtctt 6720 ggagctctag tgctcacgct agctaccttc ttcctgtggg cggcagaggt tcctggaacc 6780 aaaatagcag ggaccctgct gatcgccctg ctgctgatgg tggttctcat cccagaaccg 6840 gaaaaacaga ggtcacagac agacaaccaa ctagcggtgt ttctcatctg cgtcttgacc 6900 gtggttggag tggtggcagc aaacgagtac gggatgctag aaaaaaccaa agcagatctc 6960 aagagcatgt ttggcggaaa gacacaggca tcaggactga ctggattgcc aagcatggca 7020 ctggacctgc gtccagccac agcctgggca ctgtatgggg ggagcacagt tgtgctaacc 7080 cctcttctga agcacctgat cacgtcggaa tatgtcacca catcgctagc ctcaattaac

tcacaagctg gctcattatt cgtcttgcca cgaggcgtgc ctttcaccga tctagacctg	7140
accgttggcc tcgtcttcct tggctgctgg ggtcaaatca ccctcacaac gtttttgaca	7200
gccatggttc tggcgacact tcactatggg tacatgctcc ctggatggca agcagaagca	7260
ctcagggctg cccagagaag gacggcggct ggaataatga agaatgccgt tgttgacgga	7320
atggtcgcca ctgatgtgcc tgaactggaa aggactactc ctctgatgca aaagaaagtc	7380
ggacaggtgc tectcatagg ggtgagegtg geagegttte tegtcaacee taatgteace	7440
actgtgagag aagcaggggt gttggtgacg gcggctacgc tcaccttgtg ggataatgga	7500
gccagtgccg tttggaattc caccacagcc acgggactct gccatgtcat gcgaggtagc	7560
tacctggctg gaggctctat tgcttggact cttatcaaga acgctgacaa gccctccttg	7620
aaaaggggaa ggcctggggg caggacgcta ggggagcagt ggaaggaaaa actaaatgc	c 7680
aaaaggggaa ggcctggggg caggacgcta ggggagcagt ggaaggaaaa actaaatgc atgagcagag aagagttttt taaataccgg agagaggcca taatcgaggt ggaccgcact	7680 7740
atgagcagag aagagttttt taaataccgg agagaggcca taatcgaggt ggaccgcact	7740
atgagcagag aagagttttt taaataccgg agagaggcca taatcgaggt ggaccgcact gaagcacgca gggctagacg tgaaaataac atagtgggag gacatccggt ttcgcgaggc	7740 7800
atgagcagag aagagttttt taaataccgg agagaggcca taatcgaggt ggaccgcact gaagcacgca gggctagacg tgaaaataac atagtgggag gacatccggt ttcgcgaggc tcagcaaaac tccgttggct cgtggagaaa ggattcgtct cgccaatagg aaaagtcatt	7740 7800 7860 7920
atgagcagag aagagttttt taaataccgg agagaggcca taatcgaggt ggaccgcact gaagcacgca gggctagacg tgaaaataac atagtgggag gacatccggt ttcgcgaggc tcagcaaaac tccgttggct cgtggagaaa ggattcgtct cgccaatagg aaaagtcatt gatctagggt gtgggcgtgg aggatggagc tactacgcag caaccctgaa gaaggtccag	7740 7800 7860 7920
atgagcagag aagagttttt taaataccgg agagaggcca taatcgaggt ggaccgcact gaagcacgca gggctagacg tgaaaataac atagtgggag gacatccggt ttcgcgaggc tcagcaaaac tccgttggct cgtggagaaa ggattcgtct cgccaatagg aaaagtcatt gatctagggt gtgggcgtgg aggatggagc tactacgcag caaccctgaa gaaggtccag gaagtcagag gatacacgaa aggtggggcg ggacatgaag agccgatgct catgcagagc	7740 7800 7860 7920 7980

8220 ttctgcataa aagttctctg cccttacatg cccaaggtca tagaaaaaat ggaagttctg 8280 cagegeeget teggaggtgg getagtaegt etececetgt eeegaaacte caateaegag 8340 atgtattggg ttagtggagc cgctggcaat gtggtgcacg ctgtgaacat gaccagccag 8400 gtactactgg ggcgaatgga tcgcacagtg tggagagggc caaagtatga ggaagatgtc 8460 aacctaggta gcggaacaag agccgtggga aagggagaag ttcatagcaa tcaggagaaa 8520 atcaagaaga gaatccagaa gcttaaagaa gaattcgcca caacgtggca caaagaccct 8580 gaacacccat accgcacttg gacataccac ggaagctatg aggtgaaggc tactggctca 8640 gccagctctc tcgtcaacgg agtggtgaag ctcatgagta aaccttggga cgccattgcc 8700 aacgtcacca ccatggccat gactgacacc accccttttg gacagcaaag agttttcaag 8760 gagaaagttg acacgaaagc tcctgagcca ccagctggag tcaaggaagt gctcaacgag 8820 accaccaact ggctgtgggc ccacttgtca cgggaaaaaa gaccccgctt gtgcaccaag gaagaattta taaagaaagt caatagcaac gcggctcttg gagcagtgtt tgctgaacag 8880 aatcaatgga gcacggcgcg tgaggctgtg gacgacccgc ggttttggga gatggtcaat 8940 9000 gaagagagg aaaaccatct gcgaggagag tgtcacacat gtatctacaa catgatggga 9060 aaaagagaga agaagcctgg agagtttgga aaagctaaag ggagcagggc catttggttc 9120 atgtggcttg gagcacggta tctagagttt gaagctttgg ggttcctgaa tgaagaccac 9180 tggctgagcc gagagaattc aggaggtgga gtagaaggct caggcgtcca aaagttggga 9240 tacatectee gtgacatage aggaaagcaa ggagggaaaa tgtacgetga tgacacegee

9300 gggtgggaca ctagaattac tagaactgat ttagaaaatg aagctaaggt gctggagctc ctagatggtg aacaccgcat gctcgcccgg gccataattg aactgactta caggcacaaa 9360 gtggtcaagg tcatgagacc tgcagcagaa ggaaagaccg tgatggacgt gatatcaaga 9420 9480 gaagaccaaa gggggagtgg acaggtggtc acttatgctc tcaacacttt cacgaacatc 9540 getgtecage tegttagget gatggagget gagggggtea ttgggecaca acaettggaa 9600 cagctgccta ggaaaaacaa gatagctgtc aggacttggc tctttgagaa tggagaggag 9660 agagtgacca ggatggcgat cagcggagac gactgtgtcg tcaagccgct ggacgacaga ttcgccacgg ccctccattt cctcaacgca atgtcaaagg ttagaaaaga catccaggaa 9720 tggaagcett cgcacggetg gcacgattgg cagcaagtte cettetgete taaccaettt 9780 9840 caggagattg tgatgaaaga cggaaggagt atagttgtcc cgtgcagagg acaggatgag 9900 ctgataggca gggctcgcat ctctccagga gctggatgga atgtgaagga cacagcttgc 9960 ctggcaaaag catatgcaca gatgtggcta ctcctatact tccatcgtag ggacctgcgt 10020 ctcatggcaa atgcgatttg ctcagcagtg ccagtggatt gggtgcccac aggcaggaca 10080 tectggteaa tacaetegaa aggagagtgg atgaecaegg aagaeatget geaggtetgg 10140 aacagagtct ggattgaaga aaatgaatgg atgatggata agactcccgt cacaagctgg 10200 acagacgttc cgtatgtggg aaagcgtgag gacatctggt gtggcagcct catcggaacg 10260 cgttccagag caacctgggc tgagaacatc tatgcggcga taaaccaggt tagagctgtc 10320 attgggaaag aaaattatgt tgactacatg acctcactca ggagatacga agacgtcttg

atccaggaag acagggtcat ctagtgtgac ttaaggtaga aatgtaaata atgtgaatga	10380
gaaaatgcat gtatatggag tcaggccagc aaaagctgcc accggatact gggtagacgg	10440
tgctgcctgc gtctcagtcc caggaggact gggttaacaa atctgacaac agaaagtgag	10500
aaagccctca gaaccgtctc ggaagtaggt ccctgctcac tggaagttga aagaccaacg	10560
tcaggccacg aatttgtgcc actccgctgg ggagtgcggc ctgcgcagcc ccaggaggac	10620
tgggttacca aagccgttga ggccccacg gcccaagcct cgtctaggat gcaatagacg	10680
aggtgtaagg actagaggtt agaggagacc ccgtggaaac aacaacatgc ggcccaagcc	10740
ccctcgaagc tgtagaggag gtggaaggac tagaggttag aggagacccc gcatttgcat	10800
caaacagcat attgacac	10818

<210> 10

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic oligodeoxyribonucleotide T

<400> 10

ccagtgttgt ggcctgcagg gcgaatt 27

<210> 11

<211> 27

<212> DNA

```
<213>
         Artificial Sequence
<220>
<223>
         oligonucleotide TR, which is complementary to oligonucleotide T
         of the SEQ. ID. No. 10
<400>
          11
                                                                          27
gatgaattcg ccctgcaggc cacaaca
<210>
         12
<211>
         18
<212>
         DNA
<213>
         Artificial Sequence
<220>
<223>
         primer J35, complementary to nt 10259-10276 of the JEV genome
<400>
         12
                                                                           18
agcaacctgg gctgagaa
<210>
         13
<211>
         18
<212>
         DNA
<213>
         Artificial Sequence
<220>
<223>
         primer J40, complementary to nt 215-232 of the JEV genome
<400>
         13
```

aaacgtactg gtcctctg

<210>	14		
<211>	18		
<212>	DNA		
<213>	Artificial Sequence		
<220>			
<223>	primer J39, which is complementary to nt 164-181 of the JEV		
	genome		
<400>	14		
	g ggaatacg		18
ooodolag	g		
<210>	15 .		
<211>	10968		
<212>	DNA		
<213>	Japanese encephalitis virus		
<400>	15		
agaagttta	t ctgtgtgaac ttcttggctt agtatcgttg agaagaatcg agagattagt	60	
		40/	
gcagtttaa	a cagttttta gaacggaaga taaccatgac taaaaaacca ggagggcccg	120	,
atacasas	on anotation at atactagance accordance concentratic concentration	180	
glaaaaac	cg ggctatcaat atgctgaaac gcggcctacc ccgcgtattc ccactagtgg	100	
gagtgaag	ag ggtagtaatg agcttgttgg acggcagagg accagtacgt ttcgtgctgg	240	
90919009			
ctcttatcac	gttcttcaag tttacagcat tagccccgac caaggcgctt ttaggccgat	300	
ggaaagca	agt ggaaaagagt gtggcaatga aacatcttac tagtttcaaa cgagaacttg	360)
gaacactc	at tgacgccgtg aacaagcggg gcagaaagca aaacaaaaga ggaggaaatg	I	420

aaggeteaat eatgtggete gegagtttgg eagttgteat agettgtgta ggageeatga

540 agttgtcaaa tttccaaggg aagcttttga tgaccattaa caacacggac attgcagacg 600 tcatcgtgat tcctacctca aaaggagaga acagatgctg ggtccgggca atcgatgtcg 660 gctacatgtg tgaggacact atcacgtacg aatgtcctaa gcttaccatg ggcaatgatc 720 cagaggatgt ggattgctgg tgtgacaacc aagaagtcta cgtccaatat ggacggtgca 780 cgcggaccag gcattccaag cgaagcagga ggtccgtgtc ggtccaaaca catggggaga 840 gttcactagt gaataaaaaa gaggcttggc tggattcaac gaaagccaca cgatatctca 900 tgaaaactga gaactggatc ataaggaatc ctggctatgc tttcctggcg gcggtacttg gctggatgct tggcagtaac aatggtcaac gcgtggtgtt taccatcctc ctgctgttgg 960 1020 tcgctccggc ttacagtttt aattgtctgg gaatgggcaa ccgtgacttc atagaaggag 1080 ccagtggagc cacttgggtg gacttagtgc tagaaggaga tagctgcttg acaatcatgg 1140 caaacgacaa accaacattg gacgtccgca tgattaacat cgaagccagc caacttgctg 1200 aggtcagaag ctattgctat catgcttcag tcactgacat ctcgacggtg gctcggtgcc 1260 ccacgactgg agaagcccac aacgagaagc gagctgatag tagctatgtg tgcaaacaag 1320 gtttcactga tcgtgggtgg ggcaacggat gtggactttt cgggaaggga agcattgaca catgtgcaaa attctcctgc accagtaagg cgattgggag aacaatccag ccagaaaaca 1380 1440 tcaaatacga agttggcatt tttgtgcatg gaaccaccac ctcggaaaac catgggaatt 1500 attcagcgca agtaggggcg tcccaggcgg caaagtttac agtaacaccc aatgctcctt 1560 cgataaccct caaacttggt gactacggag aagtcacact ggactgtgaa ccaaggagtg

gactgaacac tgaagcgttt tacgtcatga ccgtggggtc aaagtcattt ctggtccata	1620
gggaatggtt teatgacete geteteeeet ggaegteeee ttegageaea gegtggagaa	1680
acagagaact ceteatggaa tttgaagagg egeaegeeae aaaacagtee gttgttgete	1740
ttgggtcaca ggaaggaggc ctccatcagg cgctggcagg agccatcgtg gtggagtac	t 1800
caageteagt gaagttaaca teaggeeace tgaaatgtag getgaaaatg gacaaaetg	g 1860
ctctgaaagg cacaacctat ggcatgtgta cagaaaaatt ctcgttcgcg aaaaatccgg	1920
cggacactgg ccacggaaca gttgtcattg aactctccta ttctgggagt gatggcccct	1980
gcaaaattcc gattgtctcc gttgcgagcc tcaatgacat gacccccgtt gggcggctgg	2040
tgacagtgaa ccccttcgtc gcgacttcca gtgccaactc aaaggtgctg gtcgagatgg	2100
aaccccctt cggagactcc tacatcgtag ttggaagggg agacaagcag atcaaccac	cc 2160
attggcataa agctggaagc acgctgggca aggctttttc aacaactttg aagggagctc	2220
aaagactggc agcgttgggc gacacagcct gggactttgg ctctattgga ggggtcttca	2280
actccatagg aaaggccgtt caccaagtgt ttggtggcgc tttcagaaca ctctttgggg	2340
gaatgtcttg gatcacacaa gggttaatgg gtgccctact actctggatg ggcatcaacg	2400
cacgagateg atcaattget ttggccttct tggccacagg aggtgtgete gtgttcttag	2460
cgaccaatgt gcatgctgac actggatgtg ccattgacat cgcaagaaaa gagatgaga	t 2520
gcggaagtgg catcttcgtg cacaacgacg tggaagcctg ggtggatagg tataaatatt	2580
tgccagaaac gcccagatcc ctagcgaaga tcgtccacaa agcgcacaag gaaggcg	ıtgt 2640

gcggagtcag atctgtcact agactggagc accaaatgtg ggaagccgtg cgggacga	at 2700
tgaacgtcct gctcaaagag aatgcagtgg acctcagtgt ggttgtgaac aagcccgtgg	2760
ggagatatcg ctcagcccca aaacgcctgt ccatgacgca agagaagttt gaaatgggc	et 2820
ggaaagcatg gggaaaaagc attetetttg eeeeggaatt ggetaaetee acatttgttg	2880
tagatggacc tgagacaaag gaatgtcctg atgagcacag agcctggaac agcatgca	aa 2940
tcgaagactt cggctttggt atcacatcaa cccgtgtgtg gctgaagatt agagaggaaa	3000
gcactgacga gtgtgatgga gcgatcatag gcacagctgt caaaggacat gtggcagttc	3060
atagtgactt gtcgtactgg attgagagtc gctacaacga cacatggaaa cttgagaggg	3120
cagtctttgg agaggtcaaa tcttgcactt ggccagagac acacactctt tggggagatg	3180
gtgttgagga aagtgaactc atcatcccgc ataccatagc cggaccaaaa agcaagcac	a 3240
atcggaggga agggtacaaa acacaaaacc agggaccttg ggacgaaaac ggcatag	tct 3300
tggactttga ttattgccca gggacaaaag tcaccatcac agaggattgt ggcaagagag	3360
gcccttcggt cagaaccact actgacagtg gaaagttgat tactgactgg tgctgtcgca	3420
gttgctccct tccgccccta cgattccgga cagaaaatgg ctgctggtac ggaatggaaa	3480
tcagacctgt taggcatgat gaaacaacac tcgtcagatc acaggttgat gctttcaatg	3540
gtgaaatggt tgaccctttt cagctgggcc ttctggtgat gtttctggcc acccaggagg	3600
tccttcgcaa gaggtggacg gccagattga ccattcctgc ggttttgggg gccctgcttg	3660
tgctgatgct tgggggcatc acttacactg atttggcgag gtatgtggtg ctagtcgctg	3720

ctgctttcgc agaggccaat aatggaggag acgtcctgca ccttgctttg attgccgttt	3780
ttaagatcca accagctttt ctagtgatga acatgcttag cacgagatgg acgaaccaag	3840
aaaacgtggt cctggtccta ggggctgcct tctttcaatt ggcctcagta gatctgcaaa	3900
tcggagtcca cggaatcctg aatgccgccg ctatagcatg gatgattgtt cgagcgatca	3960
cettececae aaceteetee gteaceatge eagtettage gettetaaet eegggaatga	4020
gggctctata cctagacact tacagaatca tccttctcgt catagggatt tgctccctgc	4080
tgcaagagag gaaaaagacc atggcaaaaa agaaaggagc tgtactcttg ggcttagcgc	4140
tcacatccac tggatggttc tcgcccacca ccatagctgc tggacttatg gtctgcaacc	4200
caaacaagaa gagagggtgg ccagctactg agtttctgtc ggcagtcgga ttgatgtttg	4260
ccatcgtagg tggtttggcc gagttggata ttgaatccat gtcaataccc ttcatgctgg	4320
caggtettat ggeagtgtee taegtagtgt eaggaaaage aacagatatg tggetegaae	4380
gggccgccga catcagctgg gagatggatg ctgcaatcac aggaagcagt cggaggctgg	4440
atgtgaaact ggatgatgac ggagattttc acttgattga tgatcccggc gttccatgga	4500
aagtttgggt cttgcgcatg tcttgcattg gcttagccgc cctcacgcct tgggccattg	4560
ttcccgccgc tttcggttac tggctcactt taaaaacaac aaaaagaggg ggcgtgtttt	4620
gggacacgcc atccccgaaa ccttgcttaa aaggagacac cactacagga gtctaccgaa	4680
tcatggctag agggattctt ggcacctacc aggctggcgt cggagtcatg tacgagaatg	4740
ttttccacac actatggcac acaactagag gggcagccat tatgagtgga gaaggaaaat	4800

4860 tgacgccata ctggggtagc gtgaaagaag accgcatagc ttacggaggc ccatggagat 4920 ttgatcgaaa atggaatgga acagatgacg tgcaagtgat cgtggtagaa ccggggaagg 4980 ctgcggtaaa catccagaca aaaccaggag tgtttcggac ccccttcggg gaggttgggg 5040 ctgttagcct ggattacccg cgaggaacat ccggctcacc cattctggat tccaatggag 5100 acatcatagg cctatacggc aatggagttg agcttggcga tggctcatac gtcagcgcca 5160 tcgtgcaggg tgaccgtcag gaggaaccag tcccagaagc ttacactcca aacatgttaa 5220 gaaagagaca gatgactgtg ttagatttgc accctggttc agggaaaacc aggaaaattc 5280 tgccacaaat aattaaggat gcaatccagc agcgcctaag aacagctgtg ttggcaccga 5340 cgcgggtggt agcagcagaa atggcagaag ctttgagagg gctcccagta cgataccaaa 5400 cttcagcagt gcagagagag caccaaggga atgaaatagt ggatgtgatg tgccacgcca 5460 ctctgaccca cagattgatg tcaccgaaca gagtgcccaa ctacaatcta tttgtcatgg 5520 atgaagetea ttteacegae eeageeagea tageegeaeg aggatacate getaceaagg 5580 tggaattagg agaggcagca gccatcttta tgacagcgac cccgcctgga accacggatc 5640 cttttcccga ctcaaatgcc ccaatccatg atttacaaga tgagatacca gacagggcat ggagcagtgg atacgaatgg atcacagaat atgcgggtaa aaccgtgtgg tttgtggcga 5700 5760 gcgtaaaaat ggggaatgag attgcaatgt gcctccaaag agcgggaaaa aaggtcatcc 5820 aactcaaccg caagtcctat gacacagaat acccaaaatg taagaatgga gactgggatt 5880 ttgtcattac caccgacatc tctgaaatgg gggctaactt cggtgcgagc agggtcatcg

5940 actgcagaaa gagcgtgaaa cccaccatct tagaagaggg agaaggcaga gtcatcctcg 6000 gaaacccatc tcccataacc agtgctagcg cagctcaacg gaggggcaga gtaggcagaa 6060 accccaacca agttggagat gaataccatt atggaggggc taccagtgaa gatgacagta 6120 acctagccca ttggacagag gcaaagatca tgttagacaa catacacatg cccaatgggc 6180 tggtggccca gctctatgga ccagagaggg aaaaggcttt cacaatggat ggcgaatacc 6240 gtctcagggg tgaagaaaag aaaaacttct tagagctgct taggacggct gaccttccgg 6300 tgtggctggc ctataaggtg gcgtccaatg gcattcagta caccgacaga aagtggtgtt 6360 ttgatgggcc gcgcacgaat gccatactgg aggacaacac cgaggtagag atagtcaccc 6420 ggatgggtga gagaaagatc ctcaagccga gatggcttga tgcaagagta tacgcagatc 6480 accaagccct caagtggttc aaagactttg cagcaggaaa gagatcggcc gttagcttca 6540 tagaggtgct cggtcgcatg cctgagcatt tcatgggaaa gacgcgggaa gctttagaca ccatgtactt ggtcgcaacg gctgagaaag gtgggaaggc acaccgaatg gctctcgaag 6600 agttgccgga tgcactggaa accatcacac ttattgttgc catcactgta atgacaggag 6660 6720 gattetteet actaatgatg cagegaaagg gtatagggaa gatgggtett ggagetetag 6780 tgctcacgct agctaccttc ttcctgtggg cggcagaggt tcctggaacc aaaatagcag ggaccctgct gatcgccctg ctgctgatgg tggttctcat cccagaaccg gaaaaacaga 6840 6900 ggtcacagac agacaaccaa ctagcggtgt ttctcatctg cgtcttgacc gtggttggag 6960 tggtggcagc aaacgagtac gggatgctag aaaaaaccaa agcagatctc aagagcatgt

ttggcggaaa gacacaggca tcaggactga ctggattgcc aagcatggca ctggacctgc	7020
gtccagccac agcctgggca ctgtatgggg ggagcacagt tgtgctaacc cctcttctga	7080
agcacctgat cacgtcggaa tatgtcacca catcgctagc ctcaattaac tcacaagctg	7140
gctcattatt cgtcttgcca cgaggcgtgc ctttcaccga tctagacctg accgttggcc	7200
tegtetteet tggetgetgg ggteaaatea eecteacaac gtttttgaca gecatggtte	7260
tggcgacact tcactatggg tacatgctcc ctggatggca agcagaagca ctcagggctg	7320
cccagagaag gacggcggct ggaataatga agaatgccgt tgttgacgga atggtcgcca	7380
ctgatgtgcc tgaactggaa aggactactc ctctgatgca aaagaaagtc ggacaggtgc	7440
tecteatagg ggtgagegtg geagegttte tegteaacee taatgteace aetgtgagag	7500
aagcaggggt gttggtgacg gcggctacgc tcaccttgtg ggataatgga gccagtgccg	7560
tttggaattc caccacagcc acgggactct gccatgtcat gcgaggtagc tacctggctg	7620
gaggetetat tgettggaet ettateaaga aegetgaeaa geeeteettg aaaaggggaa	7680
ggcctggggg caggacgcta ggggagcagt ggaaggaaaa actaaatgcc atgagcaga	ag 7740
aagagttttt taaataccgg agagaggcca taatcgaggt ggaccgcact gaagcacgca	7800
gggctagacg tgaaaataac atagtgggag gacatccggt ttcgcgaggc tcagcaaaac	7860
tccgttggct cgtggagaaa ggattcgtct cgccaatagg aaaagtcatt gatctagggt	7920
gtgggcgtgg aggatggagc tactacgcag caaccctgaa gaaggtccag gaagtcagag	7980
gatacacgaa aggtggggcg ggacatgaag agccgatgct catgcagagc tacggctgga	8040

acctggtctc cttgaagagt ggagtggatg tgttctacaa accttcagag cctagtgaca	8100
ccctgttctg tgacataggg gaatcctccc caagtccaga agtggaagaa caacgcacac	8160
tacgcgtcct agagatgaca tccgattggt tgcatcgagg acccagagag ttctgcataa	8220
aagttetetg ecettacatg eccaaggtea tagaaaaaat ggaagttetg eagegeeget	8280
tcggaggtgg gctagtacgt ctccccctgt cccgaaactc caatcacgag atgtattggg	8340
ttagtggagc cgctggcaat gtggtgcacg ctgtgaacat gaccagccag gtactactgg	8400
ggcgaatgga tcgcacagtg tggagagggc caaagtatga ggaagatgtc aacctaggta	8460
gcggaacaag agccgtggga aagggagaag ttcatagcaa tcaggagaaa atcaagaag	a 8520
gaatccagaa gcttaaagaa gaattcgcca caacgtggca caaagaccct gaacacccat	8580
accgcacttg gacataccac ggaagctatg aggtgaaggc tactggctca gccagctctc	8640
tcgtcaacgg agtggtgaag ctcatgagta aaccttggga cgccattgcc aacgtcacca	8700
ccatggccat gactgacacc accccttttg gacagcaaag agttttcaag gagaaagttg	8760
acacgaaagc tcctgagcca ccagctggag tcaaggaagt gctcaacgag accaccaact	8820
ggctgtgggc ccacttgtca cgggaaaaaa gaccccgctt gtgcaccaag gaagaattta	8880
taaagaaagt caatagcaac gcggctcttg gagcagtgtt tgctgaacag aatcaatgga	8940
gcacggcgcg tgaggctgtg gacgacccgc ggttttggga gatggtcaat gaagagaggg	9000
aaaaccatct gcgaggagag tgtcacacat gtatctacaa catgatggga aaaagagaga	9060
agaagcctgg agagtttgga aaagctaaag ggagcagggc catttggttc atgtggcttg	9120

9180 gagcacggta tctagagttt gaagctttgg ggttcctgaa tgaagaccac tggctgagcc gagagaattc aggaggtgga gtagaaggct caggcgtcca aaagttggga tacatcctcc 9240 9300 gtgacatagc aggaaagcaa ggagggaaaa tgtacgctga tgacaccgcc gggtgggaca 9360 ctagaattac tagaactgat ttagaaaatg aagctaaggt gctggagctc ctagatggtg 9420 aacaccgcat gctcgcccgg gccataattg aactgactta caggcacaaa gtggtcaagg tcatgagacc tgcagcagaa ggaaagaccg tgatggacgt gatatcaaga gaagaccaaa 9480 gggggagtgg acaggtggtc acttatgctc tcaacacttt cacgaacatc gctgtccagc 9540 tcgttaggct gatggaggct gagggggtca ttgggccaca acacttggaa cagctgccta 9600 ggaaaaacaa gatagctgtc aggacttggc tctttgagaa tggagaggag agagtgacca 9660 9720 ggatggcgat cagcggagac gactgtgtcg tcaagccgct ggacgacaga ttcgccacgg ccctccattt cctcaacgca atgtcaaagg ttagaaaaga catccaggaa tggaagcctt 9780 cgcacggctg gcacgattgg cagcaagttc ccttctgctc taaccacttt caggagattg 9840 9900 tgatgaaaga cggaaggagt atagttgtcc cgtgcagagg acaggatgag ctgataggca 9960 gggctcgcat ctctccagga gctggatgga atgtgaagga cacagcttgc ctggcaaaag 10020 catatgcaca gatgtggcta ctcctatact tccatcgtag ggacctgcgt ctcatggcaa 10080 atgcgatttg ctcagcagtg ccagtggatt gggtgcccac aggcaggaca tcctggtcaa tacactcgaa aggagagtgg atgaccacgg aagacatgct gcaggtctgg aacagagtct 10140 ggattgaaga aaatgaatgg atgatggata agactcccgt cacaagctgg acagacgttc 10200

cgtatgtggg aaagcgtgag gacatctggt gtggcagcct catcggaacg cgttccagag	10260
caacctgggc tgagaacatc tatgcggcga taaaccaggt tagagctgtc attgggaaag	10320
aaaattatgt tgactacatg acctcactca ggagatacga agacgtcttg atccaggaag	10380
acagggtcat ctagtgtgac ttaaggtaga aatgtaaata atgtgaatga gaaaatgcat	10440
gtatatggag tcaggccagc aaaagctgcc accggatact gggtagacgg tgctgcctgc	10500
gtctcagtcc caggaggact gggttaacaa atctgacaac agaaagtgag aaagccctca	10560
gaaccgtctc ggaagtaggt ccctgctcac tggaagttga aagaccaacg tcaggccacg	10620
aatttgtgcc actccgctgg ggagtgcggc ctgcgcagcc ccaggaggac tgggttacca	10680
aagccgttga ggcccccacg gcccaagcct cgtctaggat gcaatagacg aggtgtaagg	10740
actagaggtt agaggagacc ccgtggaaac aacaacatgc ggcccaagcc ccctcgaagc	10800
tgtagaggag gtggaaggac tagaggttag aggagacccc gcatttgcat caaacagcat	10860
attgacacct gggaatagac tgggagatct tctgctctat ctcaacatca gctactaggc	10920
acagagcgcc gaagtatgta gctggtggtg aggaagaaca caggatct	10968

<210> 16

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> primer J41

<400> 16

tccgtggaat gaacaatg 18

<210> 17

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> primer J43

<400> 17

acagataaac ttctctatag tgtcccctaa 30

<210> 18

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> primer J42

<400> 18

gagaagttta tctgtgtg 18

<210> 19

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> primer J40

<400> 19

aaacgtactg gtcctctg 18

<210> 20

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> primer J90

<400> 20

ttgaggcccc cacggcccaa 20

<210> 21

<211> 41

<212> DNA

<213> Artificial Sequence

<220>

<223> primer J45

<400> 21

agtactagtc ggtccgcggc cgctcgagat cctgtgttct t 41

<210> 22

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> primer J31

<400> 22

ggctgtgggc ccacttgt 18

<210> 23

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> primer J47

<400> 23

ccaaagcttc aaactcaaga tacc 24

<210> 24

<211> 43

<212> DNA

<213> Artificial Sequence

<220>

<223> primer J46

<400> 24

agtactagtc ggtccgcggc cgctctagag atcctgtgtt ctt

```
<210> 25
```

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> primer J81

<400> 25

tettgecege etgatgaa 18

<210> 26

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> primer J80

<400> 26

acagataaac ttctctatag tgagtcgtat 30

<210> 27

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> primer J42

18 gagaagttta tctgtgtg <210> 28 <211> 18 <212> DNA <213> Artificial Sequence <220> <223> primer J82 <400> 28 18 gcccatggta agcttagg <210> 29 <211> 27 <212> DNA <213> **Artificial Sequence** <220> <223> primer J48 <400> 29 27 actgagetea egegteeteg agatgae <210> 30 <211> 30 <212> DNA

27

<400>

<213>

<220>

Artificial Sequence

<400> 30 30 gatttaatta acacctcctc tacagcttcg <210> 31 20 <211> <212> DNA <213> Artificial Sequence <220> <223> primer J72 <400> 31 20 gaaggtaccc cattgtatgg <210> 32 <211> 30 <212> DNA <213> **Artificial Sequence** <220> <223> primer J73 <400> 32 30 ttctccttta cccatggttg tggcaagctt

<223>

<210>

<211>

<212>

33

18

DNA

primer J3

<213> Artificial Sequence

<220>

<223> primer J74

<400> 33

atgggtaaag gagaagaa 18

<210> 34

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> primer J75

<400> 34

aagatgcatt cattaaccgt cgactgcaga 30

<210> 35

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> primer J76

<400> 35

tttggcgtct tccatggttg tggcaagctt

```
<210> 36
```

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> primer J77

<400> 36

atggaagacg ccaaaaac

18

<210> 37

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> primer J78

<400> 37

cttaagatgc attcattaca cggcgatctt

30

<210> 38

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> primer J89

<400> 38

•	
<210>	39
<211>	30
<212>	DNA
<213>	Artificial Sequence
<220>	

tgctttggcc ttcttggcca

<400> 39 accegcatat tetgtgatec gtggttecag

primer J91

<210> 40 <211> 18 <212> DNA

<213> Artificial Sequence

<220>

<223>

<223> primer J92

<400> 40

acagaatatg cgggtaaa

<210> 41 <211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> primer J93

20

30

21 agctaacggc cgatctcttt c 42 <210> <211> 16847 <212> DNA <213> Artificial Sequence <220> <223> sequence for pBAC/SV vector 42 <400> 60 attgacggcg tagtacacac tattgaatca aacagccgac caattgcact accatcacaa 120 tggagaagcc agtagtaaac gtagacgtag acccccagag tccgtttgtc gtgcaactgc aaaaaagctt cccgcaattt gaggtagtag cacagcaggt cactccaaat gaccatgcta 180 240 atgccagagc attttcgcat ctggccagta aactaatcga gctggaggtt cctaccacag 300 cgacgatctt ggacataggc agcgcaccgg ctcgtagaat gttttccgag caccagtatc 360 attgtgtctg ccccatgcgt agtccagaag acccggaccg catgatgaaa tacgccagta 420 aactggcgga aaaagcgtgc aagattacaa acaagaactt gcatgagaag attaaggatc 480 tccggaccgt acttgatacg ccggatgctg aaacaccatc gctctgcttt cacaacgatg

ttacctgcaa catgcgtgcc gaatattccg tcatgcagga cgtgtatatc aacgctcccg

gaactatcta tcatcaggct atgaaaggcg tgcggaccct gtactggatt ggcttcgaca

41

<400>

36

540

ccacccagtt catgttctcg gctatggcag gttcgtaccc tgcgtacaac accaactggg	660
ccgacgagaa agtccttgaa gcgcgtaaca tcggactttg cagcacaaag ctgagtgaag	720
gtaggacagg aaaattgtcg ataatgagga agaaggagtt gaagcccggg tcgcgggttt	780
atttctccgt aggatcgaca ctttatccag aacacagagc cagcttgcag agctggcatc	840
ttccatcggt gttccacttg aatggaaagc agtcgtacac ttgccgctgt gatacagtgg	900
tgagttgcga aggctacgta gtgaagaaaa tcaccatcag tcccgggatc acgggagaaa	960
ccgtgggata cgcggttaca cacaatagcg agggcttctt gctatgcaaa gttactgaca	1020
cagtaaaagg agaacgggta tcgttccctg tgtgcacgta catcccggcc accatatgcg	1080
atcagatgac tggtataatg gccacggata tatcacctga cgatgcacaa aaacttctgg	1140
ttgggctcaa ccagcgaatt gtcattaacg gtaggactaa caggaacacc aacaccatgc	1200
aaaattacct tctgccgatc atagcacaag ggttcagcaa atgggctaag gagcgcaagg	1260
atgatcttga taacgagaaa atgctgggta ctagagaacg caagcttacg tatggctgct	1320
tgtgggcgtt tcgcactaag aaagtacatt cgttttatcg cccacctgga acgcagacct	1380
gcgtaaaagt cccagcctct tttagcgctt ttcccatgtc gtccgtatgg acgacctctt	1440
tgcccatgtc gctgaggcag aaattgaaac tggcattgca accaaagaag gaggaaaaac	1500
tgctgcaggt ctcggaggaa ttagtcatgg aggccaaggc tgcttttgag gatgctcagg	1560
aggaagccag agcggagaag ctccgagaag cacttccacc attagtggca gacaaaggca	a 1620
tcgaggcagc cgcagaagtt gtctgcgaag tggaggggct ccaggcggac atcggagcag	1680

cattagttga aaccccgcgc ggtcacgtaa ggataatacc tcaagcaaat gaccgtatga	1740
tcggacagta tatcgttgtc tcgccaaact ctgtgctgaa gaatgccaaa ctcgcaccag	1800
cgcacccgct agcagatcag gttaagatca taacacactc cggaagatca ggaaggtacg	1860
eggtegaace atacgaeget aaagtaetga tgeeageagg aggtgeegta eeatggeeag	1920
aattcctagc actgagtgag agcgccacgt tagtgtacaa cgaaagagag tttgtgaacc	1980
gcaaactata ccacattgcc atgcatggcc ccgccaagaa tacagaagag gagcagtaca	2040
aggttacaaa ggcagagctt gcagaaacag agtacgtgtt tgacgtggac aagaagcgtt	2100
gcgttaagaa ggaagaagcc tcaggtctgg tcctctcggg agaactgacc aaccctccct	2160
atcatgaget agetetggag ggaetgaaga eeegaeetge ggteeegtae aaggtegaaa	2220
caataggagt gataggcaca ccggggtcgg gcaagtcagc tattatcaag tcaactgtca	2280
cggcacgaga tcttgttacc agcggaaaga aagaaaattg tcgcgaaatt gaggccgacg	2340
tgctaagact gaggggtatg cagattacgt cgaagacagt agattcggtt atgctcaacg	2400
gatgccacaa agccgtagaa gtgctgtacg ttgacgaagc gttcgcgtgc cacgcaggag	2460
cactacttgc cttgattgct atcgtcaggc cccgcaagaa ggtagtacta tgcggagacc	2520
ccatgcaatg cggattcttc aacatgatgc aactaaaggt acatttcaat caccctgaaa	2580
aagacatatg caccaagaca ttctacaagt atatctcccg gcgttgcaca cagccagtta	2640
cagctattgt atcgacactg cattacgatg gaaagatgaa aaccacgaac ccgtgcaaga	2700
agaacattga aatcgatatt acaggggcca caaagccgaa gccaggggat atcatcctga	2760

catgtttccg cgggtgggtt aagcaattgc aaatcgacta tcccggacat gaagtaatga	2820
cagccgcggc ctcacaaggg ctaaccagaa aaggagtgta tgccgtccgg caaaaagtca	2880
atgaaaaccc actgtacgcg atcacatcag agcatgtgaa cgtgttgctc acccgcactg	2940
aggacaggct agtgtggaaa accttgcagg gcgacccatg gattaagcag cccactaaca	3000
tacctaaagg aaactttcag gctactatag aggactggga agctgaacac aagggaataa	3060
ttgctgcaat aaacagcccc actccccgtg ccaatccgtt cagctgcaag accaacgttt	3120
gctgggcgaa agcattggaa ccgatactag ccacggccgg tatcgtactt accggttgcc	3180
agtggagcga actgttccca cagtttgcgg atgacaaacc acattcggcc atttacgcct	3240
tagacgtaat ttgcattaag tttttcggca tggacttgac aagcggactg ttttctaaac	3300
agagcatccc actaacgtac catcccgccg attcagcgag gccggtagct cattgggaca	3360
acagcccagg aacccgcaag tatgggtacg atcacgccat tgccgccgaa ctctcccgta	3420
gatttccggt gttccagcta gctgggaagg gcacacaact tgatttgcag acggggagaa	3480
ccagagttat ctctgcacag cataacctgg tcccggtgaa ccgcaatctt cctcacgcct	3540
tagtccccga gtacaaggag aagcaacccg gcccggtcaa aaaattcttg aaccagttca	3600
aacaccactc agtacttgtg gtatcagagg aaaaaattga agctccccgt aagagaatcg	3660
aatggatcgc cccgattggc atagccggtg cagataagaa ctacaacctg gctttcgggt	3720
ttccgccgca ggcacggtac gacctggtgt tcatcaacat tggaactaaa tacagaaacc	3780
accactttca gcagtgcgaa gaccatgcgg cgaccttaaa aaccctttcg cgttcggccc	3840

tgaattgcct taacctagga ggcaccctcg tggtgaagtc ctatggctac gccgaccgca	3900
acagtgagga cgtagtcacc gctcttgcca gaaagtttgt cagggtgtct gcagcgagac	3960
cagattgtgt ctcaagcaat acagaaatgt acctgatttt ccgacaacta gacaacagcc	4020
gtacacggca attcaccccg caccatctga attgcgtgat ttcgtccgtg tatgagggta	4080
caagagatgg agttggagcc gcgccgtcat accgcaccaa aagggagaat attgctgact	4140
gtcaagagga agcagttgtc aacgcagcca atccgctggg tagaccaggc gaaggagtct	4200
gccgtgccat ctataaacgt tggccgacca gttttaccga ttcagccacg gagacaggca	4260
ccgcaagaat gactgtgtgc ctaggaaaga aagtgatcca cgcggtcggc cctgatttcc	4320
ggaagcaccc agaagcagaa gccttgaaat tgctacaaaa cgcctaccat gcagtggcag	4380
acttagtaaa tgaacataac atcaagtctg tcgccattcc actgctatct acaggcattt	4440
acttagtaaa tgaacataac atcaagtctg tcgccattcc actgctatct acaggcattt acgcagccgg aaaagaccgc cttgaagtat cacttaactg cttgacaacc gcgctagaca	4440 4500
acgcagccgg aaaagaccgc cttgaagtat cacttaactg cttgacaacc gcgctagaca	4500
acgcagccgg aaaagaccgc cttgaagtat cacttaactg cttgacaacc gcgctagaca gaactgacgc ggacgtaacc atctattgcc tggataagaa gtggaaggaa agaatcgacg	4500 4560
acgcagccgg aaaagaccgc cttgaagtat cacttaactg cttgacaacc gcgctagaca gaactgacgc ggacgtaacc atctattgcc tggataagaa gtggaaggaa agaatcgacg cggcactcca acttaaggag tctgtaacag agctgaagga tgaagatatg gagatcgacg	4500 4560 4620
acgcagccgg aaaagaccgc cttgaagtat cacttaactg cttgacaacc gcgctagaca gaactgacgc ggacgtaacc atctattgcc tggataagaa gtggaaggaa agaatcgacg cggcactcca acttaaggag tctgtaacag agctgaagga tgaagatatg gagatcgacg atgagttagt atggattcat ccagacagtt gcttgaaggg aagaaaggga ttcagtacta	4500 4560 4620 4680
acgcagcegg aaaagacege ettgaagtat cacttaactg ettgacaace gegetagaca gaactgacge ggacgtaace atctattgee tggataagaa gtggaaggaa agaategacg eggeacteca acttaaggag tetgtaacag agetgaagga tgaagatatg gagategacg atgagttagt atggatteat eeagacagtt gettgaaggg aagaaaggga tteagtacta caaaaggaaa attgtatteg tacttegaag geaceaaatt eeateaagea geaaaagaca	4500 4560 4620 4680 4740

tccacagact tagaagcaat aacgtcaaag aagttacagt atgctcctcc acccccttc	4980
ctaagcacaa aattaagaat gttcagaagg ttcagtgcac gaaagtagtc ctgtttaatc	5040
cgcacactcc cgcattcgtt cccgcccgta agtacataga agtgccagaa cagcctaccg	5100
ctectectge acaggeegag gaggeeeeg aagttgtage gacacegtea ceatetacag	5160
ctgataacac ctcgcttgat gtcacagaca tctcactgga tatggatgac agtagcgaag	5220
gctcactttt ttcgagcttt agcggatcgg acaactctat tactagtatg gacagttggt	5280
cgtcaggacc tagttcacta gagatagtag accgaaggca ggtggtggtg gctgacgttc	5340
atgccgtcca agagcctgcc cctattccac cgccaaggct aaagaagatg gcccgcctgg	5400
cagoggcaag aaaagagccc actocacogg caagcaatag ototgagtoo otocacotot	5460
cttttggtgg ggtatccatg tccctcggat caattttcga cggagagacg gcccgccagg	5520
cagoggtaca accootggca acaggococa oggatgtgco tatgtottto ggatogtttt	5580
ccgacggaga gattgatgag ctgagccgca gagtaactga gtccgaaccc gtcctgtttg	5640
gatcatttga accgggcgaa gtgaactcaa ttatatcgtc ccgatcagcc gtatcttttc	5700
cactacgcaa gcagagacgt agacgcagga gcaggaggac tgaatactga ctaaccgg	gg 5760
taggtgggta catattttcg acggacacag gccctgggca cttgcaaaag aagtccgttc	5820
tgcagaacca gcttacagaa ccgaccttgg agcgcaatgt cctggaaaga attcatgccc	5880
cggtgctcga cacgtcgaaa gaggaacaac tcaaactcag gtaccagatg atgcccacc	5940
aagccaacaa aagtaggtac cagtctcgta aagtagaaaa tcagaaagcc ataaccact	6000

agcgactact gtcaggacta cgactgtata actctgccac agatcagcca gaatgctata	6060
agatcaccta teegaaacca ttgtacteea gtagegtace ggegaactae teegateeac	6120
agttcgctgt agctgtctgt aacaactatc tgcatgagaa ctatccgaca gtagcatctt	6180
atcagattac tgacgagtac gatgcttact tggatatggt agacgggaca gtcgcctgcc	6240
tggatactgc aaccttctgc cccgctaagc ttagaagtta cccgaaaaaa catgagtata	6300
gagccccgaa tatccgcagt gcggttccat cagcgatgca gaacacgcta caaaatgtgc	6360
tcattgccgc aactaaaaga aattgcaacg tcacgcagat gcgtgaactg ccaacactgg	6420
actcagcgac attcaatgtc gaatgctttc gaaaatatgc atgtaatgac gagtattggg	6480
aggagttcgc tcggaagcca attaggatta ccactgagtt tgtcaccgca tatgtagcta	6540
gactgaaagg ccctaaggcc gccgcactat ttgcaaagac gtataatttg gtcccattgc	6600
aagaagtgcc tatggataga ttcgtcatgg acatgaaaag agacgtgaaa gttacaccag	6660
gcacgaaaca cacagaagaa agaccgaaag tacaagtgat acaagccgca gaacccc	tgg 6720
cgactgctta cttatgcggg attcaccggg aattagtgcg taggcttacg gccgtcttgc	6780
ttccaaacat tcacacgctt tttgacatgt cggcggagga ttttgatgca atcatagcag	6840
aacacttcaa gcaaggcgac ccggtactgg agacggatat cgcatcattc gacaaaagcc	6900
aagacgacgc tatggcgtta accggtctga tgatcttgga ggacctgggt gtggatcaac	6960
cactactcga cttgatcgag tgcgcctttg gagaaatatc atccacccat ctacctacgg	7020
gtactcgttt taaattcggg gcgatgatga aatccggaat gttcctcaca ctttttgtca	7080

acacagtttt gaatgtcgtt atcgccagca gagtactaga agagcggctt aaaacgtcca	7140
gatgtgcagc gttcattggc gacgacaaca tcatacatgg agtagtatct gacaaagaaa	7200
tggctgagag gtgcgccacc tggctcaaca tggaggttaa gatcatcgac gcagtcatcg	7260
gtgagagacc accttacttc tgcggcggat ttatcttgca agattcggtt acttccacag	7320
cgtgccgcgt ggcggatccc ctgaaaaggc tgtttaagtt gggtaaaccg ctcccagccg	7380
acgacgagca agacgaagac agaagacgcg ctctgctaga tgaaacaaag gcgtggttta	7440
gagtaggtat aacaggcact ttagcagtgg ccgtgacgac ccggtatgag gtagacaata	7500
ttacacctgt cctactggca ttgagaactt ttgcccagag caaaagagca ttccaagcca	7560
tcagagggga aataaagcat ctctacggtg gtcctaaata gtcagcatag tacatttcat	7620
ctgactaata ccacaacacc accacctcta gacgcgtaga tctcacgtga gcatgcagga	7680
ttacacctgt cctactggca ttgagaactt ttgcccagag caaaagagca ttccaagcca	7740
tcagagggga aataaagcat ctctacggtg gtcctaaata gtcagcatag tacatttcat	7800
ctgactaata ctacaacacc accacctcta gctagagctt accatgaccg agtacaagcc	7860
cacggtgcgc ctcgccaccc gcgacgacgt cccccgggcc gtacgcaccc tcgccgccgc	7920
gttcgccgac taccccgcca cgcgccacac cgtcgacccg gaccgccaca tcgagcgggt	7980
caccgagctg caagaactct teeteaegeg egtegggete gacateggea aggtgtgggt	8040
cgcggacgac ggcgccgcgg tggcggtctg gaccacgccg gagagcgtcg aagcggggg	8100
ggtgttcgcc gagatcggcc cgcgcatggc cgagttgagc ggttcccggc tggccgcgca	8160

gcaacagatg gaaggcctcc tggcgccgca ccggcccaag gagcccgcgt ggttcctggc	8220
caccgtcggc gtctcgcccg accaccaggg caagggtctg ggcagcgccg tcgtgctccc	8280
cggagtggag gcggccgagc gcgccggggt gcccgccttc ctggagacct ccgcgccccg	8340
caacctcccc ttctacgagc ggctcggctt caccgtcacc gccgacgtcg agtgcccgaa	8400
ggaccgcgcg acctggtgca tgacccgcaa gcccggtgcc tgacgcccgc cccacgaccc	8460
gcagcgcccg accgaaagga gcgcacgacc ccatgatcgc tagaccatgg ggtaccgagc	8520
tcgaattcgc ctcgtcgcta ttaattatag gacttatgat ttttgcttgc agcatgatgc 858	0
tgactagcac acgaagatga cgggcccaat gatccgacca gcaaaactcg atgtacttcc	8640
gaggaactga tgtgcataat gcatcaggct ggtacattag atccccgctt accgcgggca	8700
atatagcaac actaaaaact cgatgtactt ccgaggaagc gcagtgcata atgctgcgca	8760
gtgttgccac ataaccacta tattaaccat ttatctagcg gacgccaaaa actcaatgta	8820
tttctgagga agcgtggtgc ataatgccac gcagcgtctg cataactttt attatttctt 888	30
ttattaatca acaaaatttt gtttttaaca tttcaaaaaa aaaaaaaaaa	8940
aaaaaaaaaa agggaattcc tcgattaatt aagcggccgc tcgaggggaa ttaattcttg	9000
aagacgaaag ggccaggtgg cacttttcgg ggaaatgtgc gcggaacccc tatttgttta	9060
tttttctaaa tacattcaaa tatgtatccg ctcatgagac aataaccctg ataaatgctt 91	20
caataatccc tcgtccacgt ggcatctcga gacctttatt ccaaggcgtc gaaccactga	9180
cgactaccct gtactcaggg cttaagccat ccaacgaact caccactgtt gctaccccc	9240

9300 tcattatgct agtcctacta agggcatggc tagcctcttt tcggccttcg ctgagaggga 9360 tttgttccct aggcctaatt attattttta attgcccaat acgtatacga gtgccttttc 9420 taattctcgt atactatagt gagtcgtatt atctagccgc ccgggccgtc gaccaattct 9480 catgtttgac agcttatcat cgaatttctg ccattcatcc gcttattatc acttattcag 9540 9600 tgccactcat cgcagtactg ttgtaattca ttaagcattc tgccgacatg gaagccatca 9660 caaacggcat gatgaacctg aatcgccagc ggcatcagca ccttgtcgcc ttgcgtataa 9720 tatttgccca tggtgaaaac gggggcgaag aagttgtcca tattggccac gtttaaatca 9780 aaactggtga aactcaccca gggattggct gagacgaaaa acatattctc aataaaccct 9840 ttagggaaat aggccaggtt ttcaccgtaa cacgccacat cttgcgaata tatgtgtaga aactgccgga aatcgtcgtg gtattcactc cagagcgatg aaaacgtttc agtttgctca 9900 9960 tggaaaacgg tgtaacaagg gtgaacacta tcccatatca ccagctcacc gtctttcatt 10020 gccatacgga attccggatg agcattcatc aggcgggcaa gaatgtgaat aaaggccgga 10080 taaaacttgt gcttattttt ctttacggtc tttaaaaaagg ccgtaatatc cagctgaacg gtctggttat aggtacattg agcaactgac tgaaatgcct caaaatgttc tttacgatgc 10140 10200 cattgggata tatcaacggt ggtatatcca gtgatttttt tctccatttt agcttcctta 10260 gctcctgaaa atctcgataa ctcaaaaaat acgcccggta gtgatcttat ttcattatgg 10320 tgaaagttgg aacctcttac gtgccgatca acgtctcatt ttcgccaaaa gttggcccag

10380 ggcttcccgg tatcaacagg gacaccagga tttatttatt ctgcgaagtg atcttccgtc 10440 acaggtattt attcgcgata agctcatgga gcggcgtaac cgtcgcacag gaaggacaga 10500 gaaagcgcgg atctgggaag tgacggacag aacggtcagg acctggattg gggaggcggt 10560 tgccgccgct gctgctgacg gtgtgacgtt ctctgttccg gtcacaccac atacgttccg 10620 ccattcctat gcgatgcaca tgctgtatgc cggtataccg ctgaaagttc tgcaaagcct 10680 gatgggacat aagtccatca gttcaacgga agtctacacg aaggtttttg cgctggatgt ggctgcccgg caccgggtgc agtttgcgat gccggagtct gatgcggttg cgatgctgaa 10740 10800 acaattatcc tgagaataaa tgccttggcc tttatatgga aatgtggaac tgagtggata 10860 tgctgttttt gtctgttaaa cagagaagct ggctgttatc cactgagaag cgaacgaaac 10920 agtogggaaa atotoccatt atogtagaga toogcattat taatotoagg agcotgtgta 10980 gcgtttatag gaagtagtgt tctgtcatga tgcctgcaag cggtaacgaa aacgatttga atatgccttc aggaacaata gaaatcttcg tgcggtgtta cgttgaagtg gagcggatta 11040 11100 tgtcagcaat ggacagaaca acctaatgaa cacagaacca tgatgtggtc tgtcctttta 11160 cagccagtag tgctcgccgc agtcgagcga cagggcgaag ccctcgagtg agcgaggaag 11220 caccagggaa cagcacttat atattctgct tacacacgat gcctgaaaaa acttcccttg 11280 gggttatcca cttatccacg gggatatttt tataattatt ttttttatag tttttagatc 11340 ttctttttta gagcgccttg taggccttta tccatgctgg ttctagagaa ggtgttgtga 11400 caaattgccc tttcagtgtg acaaatcacc ctcaaatgac agtcctgtct gtgacaaatt

11460 gcccttaacc ctgtgacaaa ttgccctcag aagaagctgt tttttcacaa agttatccct 11520 gcttattgac tcttttttat ttagtgtgac aatctaaaaa cttgtcacac ttcacatgga 11580 tctgtcatgg cggaaacagc ggttatcaat cacaagaaac gtaaaaatag cccgcgaatc 11640 gtccagtcaa acgacctcac tgaggcggca tatagtctct cccgggatca aaaacgtatg 11700 ctgtatctgt tcgttgacca gatcagaaaa tctgatggca ccctacagga acatgacggt 11760 atctgcgaga tccatgttgc taaatatgct gaaatattcg gattgacctc tgcggaagcc 11820 agtaaggata tacggcaggc attgaagagt ttcgcgggga aggaagtggt tttttatcgc 11880 cctgaagagg atgccggcga tgaaaaaggc tatgaatctt ttccttggtt tatcaaacgt 11940 gcgcacagtc catccagagg gctttacagt gtacatatca acccatatct cattcccttc 12000 tttatcgggt tacagaaccg gtttacgcag tttcggctta gtgaaacaaa agaaatcacc 12060 aatccgtatg ccatgcgttt atacgaatcc ctgtgtcagt atcgtaagcc ggatggctca 12120 ggcatcgtct ctctgaaaat cgactggatc atagagcgtt accagctgcc tcaaagttac 12180 cagcgtatgc ctgacttccg ccgccgcttc ctgcaggtct gtgttaatga gatcaacagc 12240 agaactccaa tgcgcctctc atacattgag aaaaagaaag gccgccagac gactcatatc 12300 gtattttcct tccgcgatat cacttccatg acgacaggat agtctgaggg ttatctgtca 12360 cagatttgag ggtggttcgt cacatttgtt ctgacctact gagggtaatt tgtcacagtt 12420 ttgctgtttc cttcagcctg catggatttt ctcatacttt ttgaactgta atttttaagg 12480 aagccaaatt tgagggcagt ttgtcacagt tgatttcctt ctctttccct tcgtcatgtg

acctgatatc gggggttagt tcgtcatcat tgatgagggt tgattatcac agtttattac 12540 12600 tctgaattgg ctatccgcgt gtgtacctct acctggagtt tttcccacgg tggatatttc 12660 ttcttgcgct gagcgtaaga gctatctgac agaacagttc ttctttgctt cctcgccagt 12720 tcgctcgcta tgctcggtta cacggctgcg gcgagcgcta gtgataataa gtgactgagg 12780 tatgtgctct tcttatctcc ttttgtagtg ttgctcttat tttaaacaac tttgcggttt 12840 tttgatgact ttgcgatttt gttgttgctt tgcagtaaat tgcaagattt aataaaaaaa cgcaaagcaa tgattaaagg atgttcagaa tgaaactcat ggaaacactt aaccagtgca 12900 12960 taaacgctgg tcatgaaatg acgaaggcta tcgccattgc acagtttaat gatgacagcc 13020 cggaagcgag gaaaataacc cggcgctgga gaataggtga agcagcggat ttagttgggg 13080 tttcttctca ggctatcaga gatgccgaga aagcagggcg actaccgcac ccggatatgg 13140 aaattcgagg acgggttgag caacgtgttg gttatacaat tgaacaaatt aatcatatgc 13200 gtgatgtgtt tggtacgcga ttgcgacgtg ctgaagacgt atttccaccg gtgatcgggg 13260 ttgctgccca taaaggtggc gtttacaaaa cctcagtttc tgttcatctt gctcaggatc 13320 tggctctgaa ggggctacgt gttttgctcg tggaaggtaa cgaccccag ggaacagcct caatgtatca cggatgggta ccagatcttc atattcatgc agaagacact ctcctgcctt 13380 13440 tctatcttgg ggaaaaggac gatgtcactt atgcaataaa gcccacttgc tggccggggc 13500 ttgacattat tccttcctgt ctggctctgc accgtattga aactgagtta atgggcaaat 13560 ttgatgaagg taaactgccc accgatccac acctgatgct ccgactggcc attgaaactg

13620 ttgctcatga ctatgatgtc atagttattg acagcgcgcc taacctgggt atcggcacga 13680 ttaatgtcgt atgtgctgct gatgtgctga ttgttcccac gcctgctgag ttgtttgact acacctccgc actgcagttt ttcgatatgc ttcgtgatct gctcaagaac gttgatctta 13740 13800 aagggttcga gcctgatgta cgtattttgc ttaccaaata cagcaatagt aatggctctc 13860 agtccccgtg gatggaggag caaattcggg atgcctgggg aagcatggtt ctaaaaaatg 13920 ttgtacgtga aacggatgaa gttggtaaag gtcagatccg gatgagaact gtttttgaac 13980 aggccattga tcaacgctct tcaactggtg cctggagaaa tgctctttct atttgggaac 14040 ctgtctgcaa tgaaattttc gatcgtctga ttaaaccacg ctgggagatt agataatgaa 14100 gcgtgcgcct gttattccaa aacatacgct caatactcaa ccggttgaag atacttcgtt atcgacacca gctgccccga tggtggattc gttaattgcg cgcgtaggag taatggctcg 14160 14220 cggtaatgcc attactttgc ctgtatgtgg tcgggatgtg aagtttactc ttgaagtgct 14280 ccggggtgat agtgttgaga agacctctcg ggtatggtca ggtaatgaac gtgaccagga 14340 getgettaet gaggaegeae tggatgatet eatecettet tttetaetga etggteaaea 14400 gacaccggcg ttcggtcgaa gagtatctgg tgtcatagaa attgccgatg ggagtcgccg 14460 tcgtaaagct gctgcactta ccgaaagtga ttatcgtgtt ctggttggcg agctggatga 14520 tgagcagatg gctgcattat ccagattggg taacgattat cgcccaacaa gtgcttatga 14580 acgtggtcag cgttatgcaa gccgattgca gaatgaattt gctggaaata tttctgcgct 14640 ggctgatgcg gaaaatattt cacgtaagat tattacccgc tgtatcaaca ccgccaaatt

gcctaaatca gttgttgctc ttttttctca ccccggtgaa ctatctgccc ggtcaggtga	14700
tgcacttcaa aaagccttta cagataaaga ggaattactt aagcagcagg catctaacct	14760
tcatgagcag aaaaaagctg gggtgatatt tgaagctgaa gaagttatca ctcttttaac	14820
ttctgtgctt aaaacgtcat ctgcatcaag aactagttta agctcacgac atcagtttgc	14880
tcctggagcg acagtattgt ataagggcga taaaatggtg cttaacctgg acaggtctcg	14940
tgttccaact gagtgtatag agaaaattga ggccattctt aaggaacttg aaaagccagc	15000
accetgatge gaccacgttt tagtetacgt ttatetgtet ttacttaatg teettigtta	5060
caggccagaa agcataactg gcctgaatat tctctctggg cccactgttc cacttgtatc	15120
gtcggtctga taatcagact gggaccacgg tcccactcgt atcgtcggtc tgattattag	15180
tctgggacca cggtcccact cgtatcgtcg gtctgattat tagtctggga ccacggtccc	15240
actegtateg teggtetgat aateagaetg ggaceaeggt eccaetegta tegteggtet	15300
gattattagt ctgggaccat ggtcccactc gtatcgtcgg tctgattatt agtctgggac	15360
cacggtccca ctcgtatcgt cggtctgatt attagtctgg aaccacggtc ccactcgtat	15420
cgtcggtctg attattagtc tgggaccacg gtcccactcg tatcgtcggt ctgattatta	15480
gtctgggacc acgatcccac tcgtgttgtc ggtctgatta tcggtctggg accacggtcc	15540
cacttgtatt gtcgatcaga ctatcagcgt gagactacga ttccatcaat gcctgtcaag	15600
ggcaagtatt gacatgtcgt cgtaacctgt agaacggagt aacctcggtg tgcggttgta	15660
tgcctgctgt ggattgctgc tgtgtcctgc ttatccacaa cattttgcgc acggttatgt	15720

15780 ggacaaaata cctggttacc caggccgtgc cggcacgtta accgggctgc atccgatgca 15840 agtgtgtcgc tgtcgacgag ctcgcgagct cggacatgag gttgccccgt attcagtgtc 15900 gctgatttgt attgtctgaa gttgttttta cgttaagttg atgcagatca attaatacga 15960 tacctgcgtc ataattgatt atttgacgtg gtttgatggc ctccacgcac gttgtgatat 16020 gtagatgata atcattatca ctttacgggt cctttccggt gatccgacag gttacggggc 16080 ggcgacctcg cgggttttcg ctatttatga aaattttccg gtttaaggcg tttccgttct tcttcgtcat aacttaatgt ttttatttaa aataccctct gaaaagaaag gaaacgacag 16140 16200 gtgctgaaag cgagcttttt ggcctctgtc gtttcctttc tctgtttttg tccgtggaat 16260 gaacaatgga agtccgagct catcgctaat aacttcgtat agcatacatt atacgaagtt 16320 atattcgatg cggccgctga ggtctgcctc gtgaagaagg tgttgctgac tcataccagg 16380 gctgaatcgc cccatcatcc agccagaaag tgagggagcc acggttgatg agagctttgt 16440 16500 cgggaagatg cgtgatctga tccttcaact cagcaaaagt tcgatttatt caacaaagcc 16560 acgtgtctca aaatctctga tgttacattg cacaagataa aaatatatca tcatgaacaa 16620 taaaactgtc tgcttacata aacagtaata caaggggtgt tatgagccat attcaacggg 16680 aaacgtcttg ctcgacgatg ataagctgtc aaacatgaga attgggtcgt caatatgcta 16740 aaacgcggca taccccgcgt attcccacta gttaattaac ctgcaggggg ctgttagagg tcttccctag tccaactata gcgtatggac atattgtcgt tagaacgcgg ctacaattaa 16800

<210>	43		
<211>	18563		
<212>	DNA		
<213>	Artificial Sequence		
<220>			
<223>	sequence for pBACsp6/JVFL/Xhol		
100	40		
<400>	43	60	
agaagttta	it ctgtgtgaac ttcttggctt agtatcgttg agaagaatcg agagattagt	60	
acaettaa		120	
ycayıllaa	a cagttttta gaacggaaga taaccatgac taaaaaaacca ggagggcccg	120	
ntaaaaan	cg ggctatcaat atgctgaaac gcggcctacc ccgcgtattc ccactagtgg	180	
gladada	og ggotatodat digotganno goggottano cogogianno conseng gg		
gagtgaag	ag ggtagtaatg agcttgttgg acggcagagg accagtacgt ttcgtgctgg	240	
ctcttatcac	gttcttcaag tttacagcat tagccccgac caaggcgctt ttaggccgat	300	
ggaaagca	agt ggaaaagagt gtggcaatga aacatcttac tagtttcaaa cgagaacttg	360	
	•		
gaacactc	at tgacgccgtg aacaagcggg gcagaaagca aaacaaaaga ggaggaaatg	4	20
		400	
aaggctca	at catgtggctc gcgagtttgg cagttgtcat agcttgtgta ggagccatga	480	
		E40	
agttgtcaa	a tttccaaggg aagcttttga tgaccattaa caacacggac attgcagacg	540	
tootoataa	t tootoootee oooggaagaa acagatacta gateegaaga ategatateg	600	
icaicgiga	t tcctacctca aaaggagaga acagatgctg ggtccgggca atcgatgtcg	300	
actacatat	g tgaggacact atcacgtacg aatgtcctaa gcttaccatg ggcaatgatc	660	
goldodigi	9 194994444 4194491449 441914444 94184449 994449	-	
cagaggat	gt ggattgctgg tgtgacaacc aagaagtcta cgtccaatat ggacggtgca	720	

tacataacct tatgtatcat acacatacga tttaggggac actatag

780 cgcggaccag gcattccaag cgaagcagga ggtccgtgtc ggtccaaaca catggggaga 840 ottcactagt gaataaaaaa gaggettgge tggattcaac gaaagccaca cgatatctca 900 tgaaaactga gaactggatc ataaggaatc ctggctatgc tttcctggcg gcggtacttg 960 gctggatgct tggcagtaac aatggtcaac gcgtggtgtt taccatcctc ctgctgttgg tcgctccggc ttacagtttt aattgtctgg gaatgggcaa ccgtgacttc atagaaggag 1020 1080 ccagtggagc cacttgggtg gacttagtgc tagaaggaga tagctgcttg acaatcatgg 1140 caaacgacaa accaacattg gacgtccgca tgattaacat cgaagccagc caacttgctg 1200 aggtcagaag ctactgctat catgcttcag tcactgacat ctcgacggtg gctcggtgcc 1260 ccacgactgg agaagcccac aacgagaagc gagctgatag tagctatgtg tgcaaacaag 1320 gtttcactga tcgtgggtgg ggcaacggat gtggactttt cgggaaggga agcattgaca 1380 catgtgcaaa attctcctgc accagtaagg cgattgggag aacaatccag ccagaaaaca 1440 tcaaatacga agttggcatt tttgtgcatg gaaccaccac ctcggaaaac catgggaatt 1500 attcagcgca agtaggggcg tcccaggcgg caaagtttac agtaacaccc aatgctcctt 1560 cgataaccct caaacttggt gactacggag aagtcacact ggactgtgaa ccaaggagtg gactgaacac tgaagcgttt tacgtcatga ccgtggggtc aaagtcattt ctggtccata 1620 1680 gggaatggtt tcatgacctc gctctcccct ggacgtcccc ttcgagcaca gcgtggagaa 1740 acagagaact cctcatggaa tttgaagagg cgcacgccac aaaacagtcc gttgttgctc 1800 ttgggtcaca ggaaggaggc ctccatcagg cgctggcagg agccatcgtg gtggagtact

caagctcagt gaagttaaca tcaggccacc tgaaatgtag gctgaaaatg gacaaactgg	1860
ctctgaaagg cacaacctat ggcatgtgta cagaaaaatt ctcgttcgcg aaaaatccgg	1920
cggacactgg ccacggaaca gttgtcattg aactctccta ttctgggagt gatggcccct	1980
gcaaaattcc gattgtctcc gttgcgagcc tcaatgacat gacccccgtt gggcggctgg	2040
tgacagtgaa ccccttcgtc gcgacttcca gtgccaactc aaaggtgctg gtcgagatgg	2100
aaccccctt cggagactcc tacatcgtag ttggaagggg agacaagcag atcaaccacc	2160
attggcataa agctggaagc acgctgggca aggctttttc aacaactttg aagggagctc	2220
aaagactggc agcgttgggc gacacagcct gggactttgg ctctattgga ggggtcttca	2280
actccatagg aaaggccgtt caccaagtgt ttggtggcgc tttcagaaca ctctttgggg	2340
gaatgtcttg gatcacacaa gggttaatgg gtgccctact actctggatg ggcatcaacg	2400
cacgagatcg atcaattgct ttggccttct tggccacagg aggtgtgctc gtgttcttag	2460
cgaccaatgt gcatgctgac actggatgtg ccattgacat cgcaagaaaa gagatgagat	2520
gcggaagtgg catcttcgtg cacaacgacg tggaagcctg ggtggatagg tataaatatt	2580
tgccagaaac gcccagatcc ctagcgaaga tcgtccacaa agcgcacaag gaaggcgtgt	2640
gcggagtcag atctgtcact agactggagc accaaatgtg ggaagccgtg cgggacgaat	2700
tgaacgtcct gctcaaagag aatgcagtgg acctcagtgt ggttgtgaac aagcccgtgg	2760
ggagatatcg ctcagcccca aaacgcctgt ccatgacgca agagaagttt gaaatgggct	2820
ggaaagcatg gggaaaaagc attctctttg ccccggaatt ggctaactcc acatttgttg	2880

2940 tagatggacc tgagacaaag gaatgtcctg atgagcacag agcctggaac agcatgcaaa 3000 tcgaagactt cggctttggt atcacatcaa cccgtgtgtg gctgaagatt agagaggaaa 3060 gcactgacga gtgtgatgga gcgatcatag gcacagctgt caaaggacat gtggcagttc 3120 atagtgactt gtcgtactgg attgagagtc gctacaacga cacatggaaa cttgagaggg 3180 cagtetttgg agaggteaaa tettgeaett ggeeagagae acacactett tggggagatg 3240 gtgttgagga aagtgaactc atcatcccgc ataccatagc cggaccaaaa agcaagcaca 3300 atcggaggga agggtacaaa acacaaaacc agggaccttg ggacgaaaac ggcatagtct 3360 tggactttga ttattgccca gggacaaaag tcaccatcac agaggattgt ggcaagagag 3420 gcccttcggt cagaaccact actgacagtg gaaagttgat tactgactgg tgctgtcgca 3480 gttgctccct tccgccccta cgattccgga cagaaaatgg ctgctggtac ggaatggaaa 3540 tcagacctgt taggcatgat gaaacaacac tcgtcagatc acaggttgat gctttcaatg 3600 gtgaaatggt tgaccctttt cagctgggcc ttctggtgat gtttctggcc acccaggagg 3660 tccttcgcaa gaggtggacg gccagattga ccattcctgc ggttttgggg gccctgcttg 3720 tgctgatgct tgggggcatc acttacactg atttggcgag gtatgtggtg ctagtcgctg 3780 ctgctttcgc agaggccaat aatggaggag acgtcctgca ccttgctttg attgccgttt 3840 ttaagatcca accagctttt ctagtgatga acatgcttag cacgagatgg acgaaccaag 3900 aaaacgtggt cctggtccta ggggctgcct tctttcaatt ggcctcagta gatctgcaaa 3960 toggagtoca oggaatootg aatgoogoog otatagoatg gatgattgtt ogagogatoa

4020 ccttccccac aacctcctcc gtcaccatgc cagtcttagc gcttctaact ccgggaatga gggctctata cctagacact tacagaatca tccttctcgt catagggatt tgctccctgc 4080 4140 tgcaagagag gaaaaagacc atggcaaaaa agaaaggagc tgtactcttg ggcttagcgc 4200 tcacatccac tggatggttc tcgcccacca ccatagctgc tggactaatg gtctgcaacc 4260 caaacaagaa gagagggtgg ccagctactg agtttctgtc ggcagtcgga ttgatgtttg 4320 ccatcgtagg tggtttggcc gagttggata ttgaatccat gtcaataccc ttcatgctgg 4380 caggtcttat ggcagtgtcc tacgtagtgt caggaaaagc aacagatatg tggctcgaac gggccgccga catcagctgg gagatggatg ctgcaatcac aggaagcagt cggaggctgg 4440 4500 atgtgaaact ggatgatgac ggagattttc acttgattga tgatcccggc gttccatgga 4560 aagtttgggt cttgcgcatg tcttgcattg gcttagccgc cctcacgcct tgggccattg 4620 ttcccgccgc tttcggttac tggctcactt taaaaacaac aaaaagaggg ggcgtgtttt 4680 gggacacgcc atccccgaaa ccttgcttaa aaggagacac cactacagga gtctaccgaa 4740 tcatggctag agggattctt ggcacctacc aggctggcgt cggagtcatg tacgagaatg 4800 ttttccacac actatggcac acaactagag gggcagccat tatgagtgga gaaggaaaat 4860 tgacgccata ctggggtagc gtgaaagaag accgcatagc ttacggaggc ccatggagat 4920 ttgatcgaaa atggaatgga acagatgacg tgcaagtgat cgtggtagaa ccggggaagg 4980 ctgcggtaaa catccagaca aaaccaggag tgtttcggac ccccttcggg gaggttgggg 5040 ctgttagcct ggattacccg cgaggaacat ccggctcacc cattctggat tccaatggag

5100 acatcatagg cctatacggc aatggagttg agcttggcga tggctcatac gtcagcgcca 5160 tcgtgcaggg tgaccgtcag gaggaaccag tcccagaagc ttacactcca aacatgttaa 5220 gaaagagaca gatgactgtg ttagatttgc accetggttc agggaaaacc aggaaaattc 5280 tgccacaaat aattaaggat gcaatccagc agcgcctaag aacagctgtg ttggcaccga 5340 cgcgggtggt agcagcagaa atggcagaag ctttgagagg gctcccagta cgataccaaa 5400 cttcagcagt gcagagagag caccaaggga atgaaatagt ggatgtgatg tgccacgcca 5460 ctctgaccca cagattgatg tcaccgaaca gagtgcccaa ctacaatctg tttgtcatgg 5520 atgaagctca tttcaccgac ccagccagca tagccgcacg aggatacatc gctaccaagg 5580 tggaattagg agaggcagca gccatcttta tgacagcgac cccgcctgga accacggatc 5640 cttttcccga ctcaaatgcc ccaatccatg atttacaaga tgagatacca gacagggcat ggagcagtgg atacgaatgg atcacagaat atgcgggtaa aaccgtgtgg tttgtggcga 5700 5760 gcgtaaaaat ggggaatgag attgcaatgt gcctccaaag agcgggaaaa aaggtcatcc 5820 aactcaaccg caagtcctat gacacagaat acccaaaatg taagaatgga gactgggatt 5880 ttgtcattac caccgacatc tctgaaatgg gggctaactt cggtgcgagc agggtcatcg 5940 actgcagaaa gagcgtgaaa cccaccatct tagaagaggg agaaggcaga gtcatcctcg 6000 gaaacccatc tcccataacc agtgctagcg cagctcaacg gaggggcaga gtaggcagaa 6060 accccaacca agttggagat gaataccatt atggaggggc taccagtgaa gatgacagta 6120 acctagecea ttggacagag geaaagatea tgttagacaa catacacatg eecaatggge

tggtggccca gctctatgga ccagagaggg aaaaggcttt cacaatggat ggcgaatacc	6180
gtctcagggg tgaagaaaag aaaaacttct tagagctgct taggacggct gaccttccgg	6240
tgtggctggc ctataaggtg gcgtccaatg gcattcagta caccgacaga aagtggtgtt	6300
ttgatgggcc gcgcacgaat gccatactgg aggacaacac cgaggtagag atagtcaccc	6360
ggatgggtga gagaaagatc ctcaagccga gatggcttga tgcaagagta tacgcagatc	6420
accaagccct caagtggttc aaagactttg cagcaggaaa gagatcggcc gttagcttca	6480
tagaggtgct cggtcgcatg cctgagcatt tcatgggaaa gacgcgggaa gctttagaca	6540
ccatgtactt ggtcgcaacg gctgagaaag gtgggaaggc acaccgaatg gctctcgaag	6600
agttgccgga tgcactggaa accatcacac ttattgttgc catcactgta atgacaggag	6660
gattetteet actaatgatg cagegaaagg gtatagggaa gatgggtett ggagetetag	6720
tgctcacgct agctaccttc ttcctgtggg cggcagaggt tcctggaacc aaaatagcag	6780
ggaccctgct gatcgccctg ctgctgatgg tggttctcat cccagaaccg gaaaaacaga	6840
ggtcacagac agacaaccaa ctagcggtgt ttctcatctg cgtcttgacc gtggttggag	6900
tggtggcagc aaacgagtac gggatgctag aaaaaaccaa agcagatctc aagagcatgt	6960
ttggcggaaa gacacaggca tcaggactga ctggattgcc aagcatggca ctggacctgc	7020
gtccagccac agcctgggca ctgtatgggg ggagcacagt tgtgctaacc cctcttctga	7080
agcacctgat cacgtcggaa tatgtcacca catcgctagc ctcaattaac tcacaagctg	7140
gctcattatt cgtcttgcca cgaggcgtgc ctttcaccga tctagacctg accgttggcc	7200

tegtetteet tggetgetgg ggteaaatea eeeteacaae gtttttgaca gecatggtte	7260
tggcgacact tcactatggg tacatgctcc ctggatggca agcagaagca ctcagggctg	7320
cccagagaag gacggcggct ggaataatga agaatgccgt tgttgacgga atggtcgcca	7380
ctgatgtgcc tgaactggaa aggactactc ctctgatgca aaagaaagtc ggacaggtgc	7440
tecteatagg ggtgagegtg geagegttte tegteaacee taatgteace aetgtgagag	7500
aagcaggggt gttggtgacg gcggctacgc tcaccttgtg ggataatgga gccagtgccg	7560
tttggaattc caccacagcc acgggactct gccatgtcat gcgaggtagc tacctggctg	7620
gaggetetat tgettggaet ettateaaga aegetgaeaa geeeteettg aaaaggggaa	7680
ggcctggggg caggacgcta ggggagcagt ggaaggaaaa actaaatgcc atgagcaga	ag 7740
aagagttttt taaataccgg agagaggcca taatcgaggt ggaccgcact gaagcacgca	7800
gggctagacg tgaaaataac atagtgggag gacatccggt ttcgcgaggc tcagcaaaac	7860
tccgttggct cgtggagaaa ggattcgtct cgccaatagg aaaagtcatt gatctagggt	7920
gtgggcgtgg aggatggagc tactacgcag caaccetgaa gaaggtccag gaagtcagag	7980
gatacacgaa aggtggggcg ggacatgaag agccgatgct catgcagagc tacggctgga	a 8040
acctggtctc cttgaagagt ggagtggatg tgttctacaa accttcagag cctagtgaca	8100
ccctgttctg tgacataggg gaatcctccc caagtccaga agtggaagaa caacgcacac	8160
tacgcgtcct agagatgaca tccgattggt tgcatcgagg acccagagag ttctgcataa	8220
aagttetetg ceettacatg ceeaaggtea tagaaaaaat ggaagttetg cagegeeget	8280

8340 tcggaggtgg gctagtacgt ctcccctgt cccgaaactc caatcacgag atgtattggg 8400 ttagtggagc cgctggcaat gtggtgcacg ctgtgaacat gaccagccag gtactactgg 8460 ggcgaatgga tcgcacagtg tggagagggc caaagtatga ggaagatgtc aacctaggta 8520 gcggaacaag agccgtggga aagggagaag ttcatagcaa tcaggagaaa atcaagaaga 8580 gaatccagaa gcttaaagaa gaattcgcca caacgtggca caaagaccct gaacacccat accgcacttg gacataccac ggaagctatg aggtgaaggc tactggctca gccagctctc 8640 8700 tcgtcaacgg agtggtgaag ctcatgagta aaccttggga cgccattgcc aacgtcacca 8760 ccatggccat gactgacacc accccttttg gacagcaaag agttttcaag gagaaagttg 8820 acacgaaagc teetgageea eeagetggag teaaggaagt geteaacgag accaceaact 8880 ggctgtgggc ccacttgtca cgggaaaaaa gaccccgctt gtgcaccaag gaagaattta 8940 taaagaaagt caatagcaac gcggctcttg gagcagtgtt tgctgaacag aatcaatgga gcacggcgcg tgaggctgtg gacgacccgc ggttttggga gatggtcaat gaagagaggg 9000 9060 aaaaccatct gcgaggagag tgtcacacat gtatctacaa catgatggga aaaagagaga 9120 agaagcctgg agagtttgga aaagctaaag ggagcagggc catttggttc atgtggcttg 9180 gagcacggta tctagagttt gaagctttgg ggttcctgaa tgaagaccac tggctgagcc 9240 gagagaattc aggaggtgga gtagaaggct caggcgtcca aaagttggga tacatcctcc 9300 gtgacatagc aggaaagcaa ggagggaaaa tgtacgctga tgacaccgcc gggtgggaca 9360 ctagaattac tagaactgat ttagaaaatg aagctaaggt gctggagctc ctagatggtg

aacaccgcat gctcgcccgg gccataattg aactgactta caggcacaaa gtggtcaagg 9420 9480 tcatgagacc tgcagcagaa ggaaagaccg tgatggacgt gatatcaaga gaagaccaaa 9540 gggggagtgg acaggtggtc acttatgctc tcaacacttt cacgaacatc gctgtccagc 9600 tcgttaggct gatggaggct gagggggtca ttgggccaca acacttggaa cagctgccta 9660 ggaaaaacaa gatagctgtc aggacttggc tctttgagaa tggagaggag agagtgacca 9720 ggatggcgat cagcggagac gactgtgtcg tcaagccgct ggacgacaga ttcgccacgg 9780 ccctccattt cctcaacgca atgtcaaagg ttagaaaaga catccaggaa tggaagcctt 9840 cgcacggctg gcacgattgg cagcaagttc ccttctgctc taaccacttt caggagattg 9900 tgatgaaaga cggaaggagt atagttgtcc cgtgcagagg acaggatgag ctgataggca 9960 gggctcgcat ctctccagga gctggatgga atgtgaagga cacagcttgc ctggcaaaag 10020 catatgcaca gatgtggcta ctcctatact tccatcgtag ggacctgcgt ctcatggcaa atgcgatttg ctcagcagtg ccagtggatt gggtgcccac aggcaggaca tcctggtcaa 10080 10140 tacactcgaa aggagagtgg atgaccacgg aagacatgct gcaggtctgg aacagagtct 10200 ggattgaaga aaatgaatgg atgatggata agactcccgt cacaagctgg acagacgttc 10260 cgtatgtggg aaagcgtgag gacatctggt gtggcagcct catcggaacg cgttccagag 10320 caacctgggc tgagaacatc tatgcggcga taaaccaggt tagagctgtc attgggaaag 10380 aaaattatgt tgactacatg acctcactca ggagatacga agacgtcttg atccaggaag 10440 acagggtcat ctagtgtgac ttaaggtaga aatgtaaata atgtgaatga gaaaatgcat

10500 gtatatggag tcaggccagc aaaagctgcc accggatact gggtagacgg tgctgcctgc 10560 gtctcagtcc caggaggact gggttaacaa atctgacaac agaaagtgag aaagccctca 10620 gaaccgtctc ggaagtaggt ccctgctcac tggaagttga aagaccaacg tcaggccacg 10680 aatttgtgcc actccgctgg ggagtgcggc ctgcgcagcc ccaggaggac tgggttacca 10740 aagccgttga ggccccacg gcccaagcct cgtctaggat gcaatagacg aggtgtaagg 10800 actagaggtt agaggagacc ccgtggaaac aacaacatgc ggcccaagcc ccctcgaagc 10860 tgtagaggag gtggaaggac tagaggttag aggagacccc gcatttgcat caaacagcat 10920 attgacacct gggaatagac tgggagatct tctgctctat ctcaacatca gctactaggc acagagegee gaagtatgta getggtggtg aggaagaaca caggateteg ageggeegeg 10980 11040 gaccgactag cctcttttcg gccttcgctg agagggattt gttccctagg cctaattatt 11100 attittaatt gcccaatacg tatacgagtg ccttttctaa ttctcgtata ctatagtgag 11160 tcgtattatc tagccgcccg ggccgtcgac caattctcat gtttgacagc ttatcatcga 11220 atttctgcca ttcatccgct tattatcact tattcaggcg tagcaaccag gcgtttaagg gcaccaataa ctgccttaaa aaaattacgc cccgccctgc cactcatcgc agtactgttg 11280 11340 taattcatta agcattctgc cgacatggaa gccatcacaa acggcatgat gaacctgaat 11400 cgccagcggc atcagcacct tgtcgccttg cgtataatat ttgcccatgg tgaaaacggg ggcgaagaag ttgtccatat tggccacgtt taaatcaaaa ctggtgaaac tcacccaggg 11460 11520 attggctgag acgaaaaaca tattctcaat aaacccttta gggaaatagg ccaggttttc

accgtaacac gccacatctt gcgaatatat gtgtagaaac tgccggaaat cgtcgtggta	11580
ttcactccag agcgatgaaa acgtttcagt ttgctcatgg aaaacggtgt aacaagggtg	11640
aacactatcc catatcacca geteacegte ttteattgee ataeggaatt eeggatgage	11700
attcatcagg cgggcaagaa tgtgaataaa ggccggataa aacttgtgct tattttctt	11760
tacggtcttt aaaaaggccg taatatccag ctgaacggtc tggttatagg tacattgagc	11820
aactgactga aatgcctcaa aatgttcttt acgatgccat tgggatatat caacggtggt	11880
atatecagtg atttttttet ceattttage tteettaget eetgaaaate tegataacte	1940
aaaaaatacg cccggtagtg atcttatttc attatggtga aagttggaac ctcttacgtg	12000
ccgatcaacg tctcattttc gccaaaagtt ggcccagggc ttcccggtat caacagggac	12060
accaggattt atttattctg cgaagtgatc ttccgtcaca ggtatttatt cgcgataagc	12120
tcatggagcg gcgtaaccgt cgcacaggaa ggacagagaa agcgcggatc tgggaag	tga 12180
cggacagaac ggtcaggacc tggattgggg aggcggttgc cgccgctgct gctgacggt	g 12240
tgacgttctc tgttccggtc acaccacata cgttccgcca ttcctatgcg atgcacatgc	12300
tgtatgccgg tataccgctg aaagttctgc aaagcctgat gggacataag tccatcagtt	12360
caacggaagt ctacacgaag gtttttgcgc tggatgtggc tgcccggcac cgggtgcagt	12420
ttgcgatgcc ggagtctgat gcggttgcga tgctgaaaca attatcctga gaataaatgc	12480
cttggccttt atatggaaat gtggaactga gtggatatgc tgtttttgtc tgttaaacag	12540
agaagctggc tgttatccac tgagaagcga acgaaacagt cgggaaaatc tcccattatc	12600

12660 gtagagatcc gcattattaa tctcaggagc ctgtgtagcg tttataggaa gtagtgttct 12720 gtcatgatgc ctgcaagcgg taacgaaaac gatttgaata tgccttcagg aacaatagaa 12780 atcttcgtgc ggtgttacgt tgaagtggag cggattatgt cagcaatgga cagaacaacc 12840 taatgaacac agaaccatga tgtggtctgt ccttttacag ccagtagtgc tcgccgcagt 12900 cgagcgacag ggcgaagccc tcgagtgagc gaggaagcac cagggaacag cacttatata 12960 ttctgcttac acacgatgcc tgaaaaaact tcccttgggg ttatccactt atccacgggg atatttttat aattatttt tttatagttt ttagatcttc ttttttagag cgccttgtag 13020 gcctttatcc atgctggttc tagagaaggt gttgtgacaa attgcccttt cagtgtgaca 13080 13140 aatcaccctc aaatgacagt cctgtctgtg acaaattgcc cttaaccctg tgacaaattg 13200 ccctcagaag aagctgtttt ttcacaaagt tatccctgct tattgactct tttttattta 13260 gtgtgacaat ctaaaaactt gtcacacttc acatggatct gtcatggcgg aaacagcggt tatcaatcac aagaaacgta aaaatagccc gcgaatcgtc cagtcaaacg acctcactga 13320 13380 ggcggcatat agtctctccc gggatcaaaa acgtatgctg tatctgttcg ttgaccagat 13440 cagaaaatct gatggcaccc tacaggaaca tgacggtatc tgcgagatcc atgttgctaa 13500 atatgctgaa atattcggat tgacctctgc ggaagccagt aaggatatac ggcaggcatt 13560 gaagagtttc gcggggaagg aagtggtttt ttatcgccct gaagaggatg ccggcgatga 13620 aaaaggctat gaatcttttc cttggtttat caaacgtgcg cacagtccat ccagagggct 13680 ttacagtgta catatcaacc catatctcat tcccttcttt atcgggttac agaaccggtt

tacgcagttt cggcttagtg aaacaaaaga aatcaccaat ccgtatgcca tgcgtttata	13740
cgaatccctg tgtcagtatc gtaagccgga tggctcaggc atcgtctctc tgaaaatcga	13800
ctggatcata gagcgttacc agctgcctca aagttaccag cgtatgcctg acttccgccg	13860
ccgcttcctg caggtctgtg ttaatgagat caacagcaga actccaatgc gcctctcata	13920
cattgagaaa aagaaaggcc gccagacgac tcatatcgta ttttccttcc gcgatatcac	13980
ttccatgacg acaggatagt ctgagggtta tctgtcacag atttgagggt ggttcgtcac	14040
attigtictg acctactgag ggtaattigt cacagittitg ctgitticctt cagcctgcat	14100
ggattttctc atactttttg aactgtaatt tttaaggaag ccaaatttga gggcagtttg	14160
tcacagttga tttccttctc tttcccttcg tcatgtgacc tgatatcggg ggttagttcg	14220
tcatcattga tgagggttga ttatcacagt ttattactct gaattggcta tccgcgtgtg	14280
tacctctacc tggagttttt cccacggtgg atatttcttc ttgcgctgag cgtaagagct	14340
atetgacaga acagttette tttgetteet egecagtteg etegetatge teggttacae	14400
ggctgcggcg agcgctagtg ataataagtg actgaggtat gtgctcttct tatctccttt	14460
tgtagtgttg ctcttatttt aaacaacttt gcggtttttt gatgactttg cgattttgtt 14	520
gttgctttgc agtaaattgc aagatttaat aaaaaaacgc aaagcaatga ttaaaggatg	14580
ttcagaatga aactcatgga aacacttaac cagtgcataa acgctggtca tgaaatgac	og 14640
aaggctatcg ccattgcaca gtttaatgat gacagcccgg aagcgaggaa aataacc	cgg 14700
cgctggagaa taggtgaagc agcggattta gttggggttt cttctcaggc tatcagagat	14760

14820 gccgagaaag cagggcgact accgcacccg gatatggaaa ttcgaggacg ggttgagcaa 14880 cgtgttggtt atacaattga acaaattaat catatgcgtg atgtgtttgg tacgcgattg 14940 cgacgtgctg aagacgtatt tccaccggtg atcggggttg ctgcccataa aggtggcgtt 15000 tacaaaacct cagtttctgt tcatcttgct caggatctgg ctctgaaggg gctacgtgtt 15060 ttgctcgtgg aaggtaacga cccccaggga acagcctcaa tgtatcacgg atgggtacca 15120 gatetteata tteatgeaga agacaetete etgeetttet atettgggga aaaggaegat 15180 gtcacttatg caataaagcc cacttgctgg ccggggcttg acattattcc ttcctgtctg 15240 gctctgcacc gtattgaaac tgagttaatg ggcaaatttg atgaaggtaa actgcccacc gatccacacc tgatgctccg actggccatt gaaactgttg ctcatgacta tgatgtcata 15300 15360 gttattgaca gcgcgcctaa cctgggtatc ggcacgatta atgtcgtatg tgctgctgat 15420 gtgctgattg ttcccacgcc tgctgagttg tttgactaca cctccgcact gcagtttttc 15480 gatatgcttc gtgatctgct caagaacgtt gatcttaaag ggttcgagcc tgatgtacgt attttgctta ccaaatacag caatagtaat ggctctcagt ccccgtggat ggaggagcaa 15540 15600 attcgggatg cctggggaag catggttcta aaaaatgttg tacgtgaaac ggatgaagtt 15660 ggtaaaggtc agatccggat gagaactgtt tttgaacagg ccattgatca acgctcttca 15720 actggtgcct ggagaaatgc tctttctatt tgggaacctg tctgcaatga aattttcgat cgtctgatta aaccacgctg ggagattaga taatgaagcg tgcgcctgtt attccaaaac 15780 15840 atacgctcaa tactcaaccg gttgaagata cttcgttatc gacaccagct gccccgatgg

15900 tggattcgtt aattgcgcgc gtaggagtaa tggctcgcgg taatgccatt actttgcctg 15960 tatgtggtcg ggatgtgaag tttactcttg aagtgctccg gggtgatagt gttgagaaga 16020 cctctcgggt atggtcaggt aatgaacgtg accaggagct gcttactgag gacgcactgg 16080 atgateteat ecettetttt etaetgaetg gteaacagae aceggegtte ggtegaagag 16140 tatctggtgt catagaaatt gccgatggga gtcgccgtcg taaagctgct gcacttaccg 16200 aaagtgatta tcgtgttctg gttggcgagc tggatgatga gcagatggct gcattatcca gattgggtaa cgattatcgc ccaacaagtg cttatgaacg tggtcagcgt tatgcaagcc 16260 gattgcagaa tgaatttgct ggaaatattt ctgcgctggc tgatgcggaa aatatttcac 16320 16380 gtaagattat tacccgctgt atcaacaccg ccaaattgcc taaatcagtt gttgctcttt 16440 tttctcaccc cggtgaacta tctgcccggt caggtgatgc acttcaaaaa gcctttacag 16500 ataaagagga attacttaag cagcaggcat ctaaccttca tgagcagaaa aaagctgggg 16560 tgatatttga agctgaagaa gttatcactc ttttaacttc tgtgcttaaa acgtcatctg 16620 catcaagaac tagtttaagc tcacgacatc agtttgctcc tggagcgaca gtattgtata 16680 agggcgataa aatggtgctt aacctggaca ggtctcgtgt tccaactgag tgtatagaga 16740 aaattgaggc cattcttaag gaacttgaaa agccagcacc ctgatgcgac cacgttttag 16800 tctacgttta tctgtcttta cttaatgtcc tttgttacag gccagaaagc ataactggcc 16860 tgaatattct ctctgggccc actgttccac ttgtatcgtc ggtctgataa tcagactggg 16920 accacggtcc cactcgtatc gtcggtctga ttattagtct gggaccacgg tcccactcgt

ategteggte tgattattag tetgggacea eggteecaet egtategteg gtetgataat	16980
cagactggga ccacggtccc actcgtatcg tcggtctgat tattagtctg ggaccatggt	17040
cccactcgta tegteggtet gattattagt etgggaceae ggteceaete gtategtegg	17100
tctgattatt agtctggaac cacggtccca ctcgtatcgt cggtctgatt attagtctgg	17160
gaccacggtc ccactcgtat cgtcggtctg attattagtc tgggaccacg atcccactcg	17220
tgttgtcggt ctgattatcg gtctgggacc acggtcccac ttgtattgtc gatcagacta	17280
tcagcgtgag actacgattc catcaatgcc tgtcaagggc aagtattgac atgtcgtcgt	17340
aacctgtaga acggagtaac ctcggtgtgc ggttgtatgc ctgctgtgga ttgctgctgt	17400
gtcctgctta tccacaacat tttgcgcacg gttatgtgga caaaatacct ggttacccag	17460
gccgtgccgg cacgttaacc gggctgcatc cgatgcaagt gtgtcgctgt cgacgagctc	17520
gcgagctcgg acatgaggtt gccccgtatt cagtgtcgct gatttgtatt gtctgaagtt	17580
gtttttacgt taagttgatg cagatcaatt aatacgatac ctgcgtcata attgattatt	17640
tgacgtggtt tgatggcctc cacgcacgtt gtgatatgta gatgataatc attatcactt	17700
tacgggtcct ttccggtgat ccgacaggtt acggggcggc gacctcgcgg gttttcgcta	17760
tttatgaaaa ttttccggtt taaggcgttt ccgttcttct tcgtcataac ttaatgtttt 17	820
tatttaaaat accctctgaa aagaaaggaa acgacaggtg ctgaaagcga gctttttggc	17880
ctctgtcgtt tcctttctct gtttttgtcc gtggaatgaa caatggaagt ccgagctcat	17940
cgctaataac ttcgtatagc atacattata cgaagttata ttcgatgcgg cgctgaggtc	18000

tgcctcgtga agaaggtgtt gctgactcat accaggcctg aatcgcccca tcatccagcc	18060
agaaagtgag ggagccacgg ttgatgagag ctttgttgta ggtggaccag ttggtgattt	. 18120
tgaacttttg ctttgccacg gaacggtctg cgttgtcggg aagatgcgtg atctgatcct	18180
tcaactcagc aaaagttcga tttattcaac aaagccacgt gtctcaaaat ctctgatgtt	18240
acattgcaca agataaaaat atatcatcat gaacaataaa actgtctgct tacataaaca	18300
gtaatacaag gggtgttatg agccatattc aacgggaaac gtcttgctcg acgatgataa	18360
gctgtcaaac atgagaattg ggtcgtcaat atgctaaaac gcggcatacc ccgcgtattc	18420
ccactagtta attaacctgc agggggctgt tagaggtctt ccctagtcca actatagcgt	18480
atggacatat tgtcgttaga acgcggctac aattaataca taaccttatg tatcatacac	18540
atacgattta ggggacacta tag	18563

<210> 44

<211> 18563

<212> DNA

<213> Artificial Sequence

<220>

<223> sequence for pBACsp6/JVFLx/Xhol

<400> 44

agaagtttat ctgtgtgaac ttcttggctt agtatcgttg agaagaatcg agagattagt 60

gcagtttaaa cagttttta gaacggaaga taaccatgac taaaaaaacca ggagggcccg 120

gtaaaaaccg ggctatcaat atgctgaaac gcggcctacc ccgcgtattc ccactagtgg	180
gagtgaagag ggtagtaatg agcttgttgg acggcagagg accagtacgt ttcgtgctgg	240
ctcttatcac gttcttcaag tttacagcat tagccccgac caaggcgctt ttaggccgat	300
ggaaagcagt ggaaaagagt gtggcaatga aacatcttac tagtttcaaa cgagaacttg	360
gaacactcat tgacgccgtg aacaagcggg gcagaaagca aaacaaaaga ggaggaaat	g 420
aaggetcaat catgtggete gegagtttgg cagttgteat agettgtgta ggagecatga	480
agttgtcaaa tttccaaggg aagcttttga tgaccattaa caacacggac attgcagacg	540
tcatcgtgat tcctacctca aaaggagaga acagatgctg ggtccgggca atcgatgtcg	600
gctacatgtg tgaggacact atcacgtacg aatgtcctaa gcttaccatg ggcaatgatc	660
cagaggatgt ggattgctgg tgtgacaacc aagaagtcta cgtccaatat ggacggtgca	720
cgcggaccag gcattccaag cgaagcagga ggtccgtgtc ggtccaaaca catggggaga	780
gttcactagt gaataaaaaa gaggcttggc tggattcaac gaaagccaca cgatatctca	840
tgaaaactga gaactggatc ataaggaatc ctggctatgc tttcctggcg gcggtacttg	900
gctggatgct tggcagtaac aatggtcaac gcgtggtgtt taccatcctc ctgctgttgg	960
tcgctccggc ttacagtttt aattgtctgg gaatgggcaa ccgtgacttc atagaaggag	1020
ccagtggagc cacttgggtg gacttagtgc tagaaggaga tagctgcttg acaatcatgg	1080
caaacgacaa accaacattg gacgtccgca tgattaacat cgaagccagc caacttgctg	1140
aggtcagaag ctactgctat catgcttcag tcactgacat ctcgacggtg gctcggtgcc	1200

1260 ccacgactgg agaagcccac aacgagaagc gagctgatag tagctatgtg tgcaaacaag 1320 gtttcactga tcgtgggtgg ggcaacggat gtggactttt cgggaaggga agcattgaca 1380 catgtgcaaa attctcctgc accagtaagg cgattgggag aacaatccag ccagaaaaca 1440 tcaaatacga agttggcatt tttgtgcatg gaaccaccac ctcggaaaac catgggaatt 1500 attcagcgca agtaggggcg tcccaggcgg caaagtttac agtaacaccc aatgctcctt 1560 cgataaccct caaacttggt gactacggag aagtcacact ggactgtgaa ccaaggagtg 1620 gactgaacac tgaagcgttt tacgtcatga ccgtggggtc aaagtcattt ctggtccata 1680 gggaatggtt tcatgacctc gctctcccct ggacgtcccc ttcgagcaca gcgtggagaa 1740 acagagaact cctcatggaa tttgaagagg cgcacgccac aaaacagtcc gttgttgctc 1800 ttgggtcaca ggaaggaggc ctccatcagg cgctggcagg agccatcgtg gtggagtact caagctcagt gaagttaaca tcaggccacc tgaaatgtag gctgaaaatg gacaaactgg 1860 1920 ctctgaaagg cacaacctat ggcatgtgta cagaaaaatt ctcgttcgcg aaaaatccgg 1980 cggacactgg ccacggaaca gttgtcattg aactctccta ttctgggagt gatggcccct 2040 gcaaaattcc gattgtctcc gttgcgagcc tcaatgacat gacccccgtt gggcggctgg 2100 tgacagtgaa ccccttcgtc gcgacttcca gtgccaactc aaaggtgctg gtcgagatgg 2160 aaccccctt cggagactcc tacatcgtag ttggaagggg agacaagcag atcaaccacc 2220 attggcataa agctggaagc acgctgggca aggctttttc aacaactttg aagggagctc 2280 aaagactggc agcgttgggc gacacagcct gggactttgg ctctattgga ggggtcttca

actccatagg aaaggccgtt caccaagtgt ttggtggcgc tttcagaaca ctctttgggg	2340
gaatgtcttg gatcacacaa gggttaatgg gtgccctact actctggatg ggcatcaacg	2400
cacgagatcg atcaattgct ttggccttct tggccacagg aggtgtgctc gtgttcttag	2460
cgaccaatgt gcatgctgac actggatgtg ccattgacat cgcaagaaaa gagatgagat	2520
gcggaagtgg catcttcgtg cacaacgacg tggaagcctg ggtggatagg tataaatatt	2580
tgccagaaac gcccagatcc ctagcgaaga tcgtccacaa agcgcacaag gaaggcgtgt	2640
gcggagtcag atctgtcact agactggagc accaaatgtg ggaagccgtg cgggacgaat	2700
tgaacgtcct gctcaaagag aatgcagtgg acctcagtgt ggttgtgaac aagcccgtgg	2760
ggagatatcg ctcagcccca aaacgcctgt ccatgacgca agagaagttt gaaatgggct	2820
ggaaagcatg gggaaaaagc attctctttg ccccggaatt ggctaactcc acatttgttg	2880
tagatggacc tgagacaaag gaatgtcctg atgagcacag agcctggaac agcatgcaaa	2940
tcgaagactt cggctttggt atcacatcaa cccgtgtgtg gctgaagatt agagaggaaa	3000
gcactgacga gtgtgatgga gcgatcatag gcacagctgt caaaggacat gtggcagttc	3060
atagtgactt gtcgtactgg attgagagtc gctacaacga cacatggaaa cttgagaggg	3120
cagtctttgg agaggtcaaa tcttgcactt ggccagagac acacactctt tggggagatg	3180
gtgttgagga aagtgaactc atcatcccgc ataccatagc cggaccaaaa agcaagcaca	3240
atcggaggga agggtacaaa acacaaaacc agggaccttg ggacgaaaac ggcatagto	et 3300
tggactttga ttattgccca gggacaaaag tcaccatcac agaggattgt ggcaagagag	3360

gcccttcggt cagaaccact actgacagtg gaaagttgat tactgactgg tgctgtcgca	3420
gttgctccct tccgccccta cgattccgga cagaaaatgg ctgctggtac ggaatggaaa	3480
tcagacctgt taggcatgat gaaacaacac tcgtcagatc acaggttgat gctttcaatg	3540
gtgaaatggt tgaccctttt cagctgggcc ttctggtgat gtttctggcc acccaggagg	3600
tccttcgcaa gaggtggacg gccagattga ccattcctgc ggttttgggg gccctgcttg	3660
tgctgatgct tgggggcatc acttacactg atttggcgag gtatgtggtg ctagtcgctg	3720
ctgctttcgc agaggccaat aatggaggag acgtcctgca ccttgctttg attgccgttt	3780
ttaagatcca accagctttt ctagtgatga acatgcttag cacgagatgg acgaaccaag	3840
aaaacgtggt cctggtccta ggggctgcct tctttcaatt ggcctcagta gatctgcaaa	3900
teggagteca eggaateetg aatgeegeeg etatageatg gatgattgtt egagegatea	3960
cettecceae aacetectee gteaceatge eagtettage gettetaact eegggaatga	4020
gggctctata cctagacact tacagaatca tccttctcgt catagggatt tgctccctgc	4080
tgcaagagag gaaaaagacc atggcaaaaa agaaaggagc tgtactcttg ggcttagcgc	4140
tcacatccac tggatggttc tcgcccacca ccatagctgc tggactaatg gtctgcaacc	4200
caaacaagaa gagagggtgg ccagctactg agtttctgtc ggcagtcgga ttgatgtttg	4260
ccatcgtagg tggtttggcc gagttggata ttgaatccat gtcaataccc ttcatgctgg	4320
caggtettat ggeagtgtee taegtagtgt caggaaaage aacagatatg tggetegaae	4380
gggccgccga catcagctgg gagatggatg ctgcaatcac aggaagcagt cggaggctgg	4440

4500 atgtgaaact ggatgatgac ggagattttc acttgattga tgatcccggc gttccatgga 4560 aagtttgggt cttgcgcatg tcttgcattg gcttagccgc cctcacgcct tgggccattg 4620 ttcccgccgc tttcggttac tggctcactt taaaaacaac aaaaagaggg ggcgtgtttt 4680 gggacacgcc atccccgaaa ccttgcttaa aaggagacac cactacagga gtctaccgaa 4740 tcatggctag agggattctt ggcacctacc aggctggcgt cggagtcatg tacgagaatg 4800 ttttccacac actatggcac acaactagag gggcagccat tatgagtgga gaaggaaaat tgacgccata ctggggtagc gtgaaagaag accgcatagc ttacggaggc ccatggagat 4860 4920 ttgatcgaaa atggaatgga acagatgacg tgcaagtgat cgtggtagaa ccggggaagg 4980 ctgcggtaaa catccagaca aaaccaggag tgtttcggac ccccttcggg gaggttgggg 5040 ctgttagect ggattacccg cgaggaacat ccggctcacc cattctggat tccaatggag acatcatagg cctatacggc aatggagttg agcttggcga tggctcatac gtcagcgcca 5100 5160 tcgtgcaggg tgaccgtcag gaggaaccag tcccagaagc ttacactcca aacatgttaa 5220 gaaagagaca gatgactgtg ttagatttgc accctggttc agggaaaacc aggaaaattc 5280 tgccacaaat aattaaggat gcaatccagc agcgcctaag aacagctgtg ttggcaccga 5340 cgcgggtggt agcagcagaa atggcagaag ctttgagagg gctcccagta cgataccaaa 5400 cttcagcagt gcagagagag caccaaggga atgaaatagt ggatgtgatg tgccacgcca 5460 ctctgaccca cagattgatg tcaccgaaca gagtgcccaa ctacaatctg tttgtcatgg 5520 atgaagetea ttteacegae eeageeagea tageegeaeg aggatacate getaceaagg

5580 tggaattagg agaggcagca gccatcttta tgacagcgac cccgcctgga accacggatc 5640 cttttcccga ctcaaatgcc ccaatccatg atttacaaga tgagatacca gacagggcat 5700 ggagcagtgg atacgaatgg atcacagaat atgcgggtaa aaccgtgtgg tttgtggcga 5760 gcgtaaaaat ggggaatgag attgcaatgt gcctccaaag agcgggaaaa aaggtcatcc 5820 aactcaaccg caagtcctat gacacagaat acccaaaatg taagaatgga gactgggatt 5880 ttgtcattac caccgacatc tctgaaatgg gggctaactt cggtgcgagc agggtcatcg actgcagaaa gagcgtgaaa cccaccatct tagaagaggg agaaggcaga gtcatcctcg 5940 6000 gaaacccatc tcccataacc agtgctagcg cagctcaacg gaggggcaga gtaggcagaa 6060 accccaacca agttggagat gaataccatt atggaggggc taccagtgaa gatgacagta 6120 acctagccca ttggacagag gcaaagatca tgttagacaa catacacatg cccaatgggc 6180 tggtggccca gctctatgga ccagagaggg aaaaggcttt cacaatggat ggcgaatacc 6240 gtctcagggg tgaagaaaag aaaaacttct tagagctgct taggacggct gaccttccgg 6300 tgtggctggc ctataaggtg gcgtccaatg gcattcagta caccgacaga aagtggtgtt 6360 ttgatgggcc gcgcacgaat gccatactgg aggacaacac cgaggtagag atagtcaccc 6420 ggatgggtga gagaaagatc ctcaagccga gatggcttga tgcaagagta tacgcagatc 6480 accaagccct caagtggttc aaagactttg cagcaggaaa gagatcggcc gttagcttca 6540 tagaggtgct cggtcgcatg cctgagcatt tcatgggaaa gacgcgggaa gctttagaca 6600 ccatgtactt ggtcgcaacg gctgagaaag gtgggaaggc acaccgaatg gctctcgaag

agttgccgga tgcactggaa accatcacac ttattgttgc catcactgta atgacaggag	6660
gattcttcct actaatgatg cagcgaaagg gtatagggaa gatgggtctt ggagctctag	6720
tgctcacgct agctaccttc ttcctgtggg cggcagaggt tcctggaacc aaaatagcag	6780
ggaccotgct gatogccotg otgotgatgg tggttotcat occagaaccg gaaaaacaga	6840
ggtcacagac agacaaccaa ctagcggtgt ttctcatctg cgtcttgacc gtggttggag	6900
tggtggcagc aaacgagtac gggatgctag aaaaaaccaa agcagatctc aagagcatgt	6960
ttggcggaaa gacacaggca tcaggactga ctggattgcc aagcatggca ctggacctgc	7020
gtccagccac agcctgggca ctgtatgggg ggagcacagt tgtgctaacc cctcttctga	7080
agcacctgat cacgtcggaa tatgtcacca catcgctagc ctcaattaac tcacaagctg	7140
gctcattatt cgtcttgcca cgaggcgtgc ctttcaccga tctagacctg accgttggcc	7200
tegtetteet tggetgetgg ggteaaatea eecteacaae gtttttgaca gecatggtte	7260
tggcgacact tcactatggg tacatgctcc ctggatggca agcagaagca ctcagggctg	7320
cccagagaag gacggcggct ggaataatga agaatgccgt tgttgacgga atggtcgcca	7380
ctgatgtgcc tgaactggaa aggactactc ctctgatgca aaagaaagtc ggacaggtgc	7440
tecteatagg ggtgagegtg geagegttte tegteaacee taatgteace actgtgagag	7500
aagcaggggt gttggtgacg gcggctacgc tcaccttgtg ggataatgga gccagtgccg	7560
tttggaattc caccacagcc acgggactct gccatgtcat gcgaggtagc tacctggctg	7620
gaggetetat tgettggaet ettateaaga aegetgaeaa geeeteettg aaaaggggaa	7680

7740 ggcctggggg caggacgcta ggggagcagt ggaaggaaaa actaaatgcc atgagcagag 7800 aagagttttt taaataccgg agagaggcca taatcgaggt ggaccgcact gaagcacgca 7860 gggctagacg tgaaaataac atagtgggag gacatccggt ttcgcgaggc tcagcaaaac 7920 tccgttggct cgtggagaaa ggattcgtct cgccaatagg aaaagtcatt gatctagggt 7980 gtgggcgtgg aggatggagc tactacgcag caaccctgaa gaaggtccag gaagtcagag 8040 gatacacgaa aggtggggcg ggacatgaag agccgatgct catgcagagc tacggctgga acctggtctc cttgaagagt ggagtggatg tgttctacaa accttcagag cctagtgaca 8100 8160 ccctgttctg tgacataggg gaatcctccc caagtccaga agtggaagaa caacgcacac 8220 tacgcgtcct agagatgaca tccgattggt tgcatcgagg acccagagag ttctgcataa 8280 aagttetetg ceettacatg ceeaaggtea tagaaaaaat ggaagttetg cagegeeget 8340 tcggaggtgg gctagtacgt ctcccctgt cccgaaactc caatcacgag atgtattggg 8400 ttagtggagc cgctggcaat gtggtgcacg ctgtgaacat gaccagccag gtactactgg 8460 ggcgaatgga tcgcacagtg tggagagggc caaagtatga ggaagatgtc aacctaggta 8520 gcggaacaag agccgtggga aagggagaag ttcatagcaa tcaggagaaa atcaagaaga 8580 gaatccagaa gcttaaagaa gaattcgcca caacgtggca caaagaccct gaacacccat 8640 accgcacttg gacataccac ggaagctatg aggtgaaggc tactggctca gccagctctc tcgtcaacgg agtggtgaag ctcatgagta aaccttggga cgccattgcc aacgtcacca 8700 8760 ccatggccat gactgacacc accccttttg gacagcaaag agttttcaag gagaaagttg

8820 acacgaaagc teetgageea eeagetggag teaaggaagt geteaaegag accaccaaet 8880 ggctgtgggc ccacttgtca cgggaaaaaa gaccccgctt gtgcaccaag gaagaattta 8940 taaagaaagt caatagcaac gcggctcttg gagcagtgtt tgctgaacag aatcaatgga 9000 gcacggcgcg tgaggctgtg gacgacccgc ggttttggga gatggtcaat gaagagaggg 9060 aaaaccatct gcgaggagag tgtcacacat gtatctacaa catgatggga aaaagagaga 9120 agaagcctgg agagtttgga aaagctaaag ggagcagggc catttggttc atgtggcttg 9180 gagcacggta tcttgagttt gaagctttgg ggttcctgaa tgaagaccac tggctgagcc 9240 gagagaattc aggaggtgga gtagaaggct caggcgtcca aaagttggga tacatcctcc 9300 gtgacatagc aggaaagcaa ggagggaaaa tgtacgctga tgacaccgcc gggtgggaca 9360 ctagaattac tagaactgat ttagaaaatg aagctaaggt gctggagctc ctagatggtg aacaccgcat gctcgcccgg gccataattg aactgactta caggcacaaa gtggtcaagg 9420 9480 tcatgagacc tgcagcagaa ggaaagaccg tgatggacgt gatatcaaga gaagaccaaa 9540 gggggagtgg acaggtggtc acttatgctc tcaacacttt cacgaacatc gctgtccagc 9600 tcgttaggct gatggaggct gagggggtca ttgggccaca acacttggaa cagctgccta 9660 ggaaaaacaa gatagctgtc aggacttggc tctttgagaa tggagaggag agagtgacca 9720 ggatggcgat cagcggagac gactgtgtcg tcaagccgct ggacgacaga ttcgccacgg 9780 ccctccattt cctcaacgca atgtcaaagg ttagaaaaga catccaggaa tggaagcctt cgcacggctg gcacgattgg cagcaagttc ccttctgctc taaccacttt caggagattg 9840

tgatgaaaga cggaaggagt atagttgtcc cgtgcagagg acaggatgag ctgataggca 9900 9960 gggctcgcat ctctccagga gctggatgga atgtgaagga cacagcttgc ctggcaaaag 10020 catatgcaca gatgtggcta ctcctatact tccatcgtag ggacctgcgt ctcatggcaa atgcgatttg ctcagcagtg ccagtggatt gggtgcccac aggcaggaca tcctggtcaa 10080 10140 tacactcgaa aggagagtgg atgaccacgg aagacatgct gcaggtctgg aacagagtct 10200 ggattgaaga aaatgaatgg atgatggata agactcccgt cacaagctgg acagacgttc 10260 cgtatgtggg aaagcgtgag gacatctggt gtggcagcct catcggaacg cgttccagag 10320 caacctgggc tgagaacatc tatgcggcga taaaccaggt tagagctgtc attgggaaag 10380 aaaattatgt tgactacatg acctcactca ggagatacga agacgtcttg atccaggaag 10440 acagggtcat ctagtgtgac ttaaggtaga aatgtaaata atgtgaatga gaaaatgcat 10500 gtatatggag tcaggccagc aaaagctgcc accggatact gggtagacgg tgctgcctgc gtctcagtcc caggaggact gggttaacaa atctgacaac agaaagtgag aaagccctca 10560 10620 gaaccgtctc ggaagtaggt ccctgctcac tggaagttga aagaccaacg tcaggccacg 10680 aatttgtgcc actccgctgg ggagtgcggc ctgcgcagcc ccaggaggac tgggttacca aagccgttga ggcccccacg gcccaagcct cgtctaggat gcaatagacg aggtgtaagg 10740 10800 actagaggtt agaggagacc ccgtggaaac aacaacatgc ggcccaagcc ccctcgaagc 10860 tgtagaggag gtggaaggac tagaggttag aggagacccc gcatttgcat caaacagcat 10920 attgacacct gggaatagac tgggagatct tctgctctat ctcaacatca gctactaggc

acagagegee gaagtatgta getggtggtg aggaagaaca caggateteg ageggeegeg	10980
gaccgactag cctcttttcg gccttcgctg agagggattt gttccctagg cctaattatt 11	040
atttttaatt gcccaatacg tatacgagtg ccttttctaa ttctcgtata ctatagtgag 1110	00
togtattatc tagccgcccg ggccgtcgac caattctcat gtttgacagc ttatcatcga 1	1160
atttctgcca ttcatccgct tattatcact tattcaggcg tagcaaccag gcgtttaagg 11	220
gcaccaataa ctgccttaaa aaaattacgc cccgccctgc cactcatcgc agtactgttg	11280
taattcatta agcattctgc cgacatggaa gccatcacaa acggcatgat gaacctgaat	11340
cgccagcggc atcagcacct tgtcgccttg cgtataatat ttgcccatgg tgaaaacggg	11400
ggcgaagaag ttgtccatat tggccacgtt taaatcaaaa ctggtgaaac tcacccaggg	11460
attggctgag acgaaaaaca tattctcaat aaacccttta gggaaatagg ccaggttttc	11520
accgtaacac gccacatctt gcgaatatat gtgtagaaac tgccggaaat cgtcgtggta	11580
ttcactccag agcgatgaaa acgtttcagt ttgctcatgg aaaacggtgt aacaagggtg	11640
aacactatcc catatcacca geteacegte ttteattgee atacggaatt eeggatgage	11700
attcatcagg cgggcaagaa tgtgaataaa ggccggataa aacttgtgct tatttttctt 1	11760
tacggtcttt aaaaaggccg taatatccag ctgaacggtc tggttatagg tacattgagc	11820
aactgactga aatgcctcaa aatgttcttt acgatgccat tgggatatat caacggtggt	11880
atatecagtg attitttet ccattitage teettaget eetgaaaate tegataaete 11946	0
aaaaaatacg cccggtagtg atcttatttc attatggtga aagttggaac ctcttacgtg	2000

12060 ccgatcaacg tctcattttc gccaaaagtt ggcccagggc ttcccggtat caacagggac 12120 accaggattt atttattctg cgaagtgatc ttccgtcaca ggtatttatt cgcgataagc 12180 tcatggagcg gcgtaaccgt cgcacaggaa ggacagagaa agcgcggatc tgggaagtga 12240 cggacagaac ggtcaggacc tggattgggg aggcggttgc cgccgctgct gctgacggtg 12300 tgacgttctc tgttccggtc acaccacata cgttccgcca ttcctatgcg atgcacatgc 12360 tgtatgccgg tataccgctg aaagttctgc aaagcctgat gggacataag tccatcagtt 12420 caacggaagt ctacacgaag gtttttgcgc tggatgtggc tgcccggcac cgggtgcagt 12480 ttgcgatgcc ggagtctgat gcggttgcga tgctgaaaca attatcctga gaataaatgc 12540 cttggccttt atatggaaat gtggaactga gtggatatgc tgtttttgtc tgttaaacag 12600 agaagctggc tgttatccac tgagaagcga acgaaacagt cgggaaaatc tcccattatc gtagagatcc gcattattaa tctcaggagc ctgtgtagcg tttataggaa gtagtgttct 12660 12720 gtcatgatgc ctgcaagcgg taacgaaaac gatttgaata tgccttcagg aacaatagaa 12780 atcttcgtgc ggtgttacgt tgaagtggag cggattatgt cagcaatgga cagaacaacc 12840 taatgaacac agaaccatga tgtggtctgt ccttttacag ccagtagtgc tcgccgcagt 12900 cgagcgacag ggcgaagccc tcgagtgagc gaggaagcac cagggaacag cacttatata 12960 ttctgcttac acacgatgcc tgaaaaaact tcccttgggg ttatccactt atccacgggg 13020 atatttttat aattattttt tttatagttt ttagatcttc ttttttagag cgccttgtag

gcctttatcc atgctggttc tagagaaggt gttgtgacaa attgcccttt cagtgtgaca

13080

13140 aatcaccctc aaatgacagt cctgtctgtg acaaattgcc cttaaccctg tgacaaattg 13200 ccctcagaag aagctgtttt ttcacaaagt tatccctgct tattgactct tttttattta 13260 gtgtgacaat ctaaaaactt gtcacacttc acatggatct gtcatggcgg aaacagcggt tatcaatcac aagaaacgta aaaatagccc gcgaatcgtc cagtcaaacg acctcactga 13320 13380 ggcggcatat agtctctccc gggatcaaaa acgtatgctg tatctgttcg ttgaccagat 13440 cagaaaatct gatggcaccc tacaggaaca tgacggtatc tgcgagatcc atgttgctaa 13500 atatgctgaa atattcggat tgacctctgc ggaagccagt aaggatatac ggcaggcatt 13560 gaagagtttc gcggggaagg aagtggtttt ttatcgccct gaagaggatg ccggcgatga 13620 aaaaggctat gaatcttttc cttggtttat caaacgtgcg cacagtccat ccagagggct 13680 ttacagtgta catatcaacc catatctcat tcccttcttt atcgggttac agaaccggtt tacgcagttt cggcttagtg aaacaaaaga aatcaccaat ccgtatgcca tgcgtttata 13740 cgaatccctg tgtcagtatc gtaagccgga tggctcaggc atcgtctctc tgaaaatcga 13800 13860 ctggatcata gagcgttacc agctgcctca aagttaccag cgtatgcctg acttccgccg 13920 ccgcttcctg caggtctgtg ttaatgagat caacagcaga actccaatgc gcctctcata 13980 cattgagaaa aagaaaggcc gccagacgac tcatatcgta ttttccttcc gcgatatcac 14040 ttccatgacg acaggatagt ctgagggtta tctgtcacag atttgagggt ggttcgtcac attigttctg acctactgag ggtaatttgt cacagttttg ctgtttcctt cagcctgcat 14100 14160 ggattttctc atactttttg aactgtaatt tttaaggaag ccaaatttga gggcagtttg

tcacagttga tttccttctc tttcccttcg tcatgtgacc tgatatcggg ggttagttcg	4220
tcatcattga tgagggttga ttatcacagt ttattactct gaattggcta tccgcgtgtg	14280
tacctctacc tggagttttt cccacggtgg atatttcttc ttgcgctgag cgtaagagct	14340
atetgacaga acagttette tttgetteet egecagtteg etegetatge teggttacae	14400
ggctgcggcg agcgctagtg ataataagtg actgaggtat gtgctcttct tatctccttt	14460
tgtagtgttg ctcttatttt aaacaacttt gcggtttttt gatgactttg cgattttgtt 1452	0
gttgctttgc agtaaattgc aagatttaat aaaaaaacgc aaagcaatga ttaaaggatg	14580
ttcagaatga aactcatgga aacacttaac cagtgcataa acgctggtca tgaaatgacg	14640
aaggctatcg ccattgcaca gtttaatgat gacagcccgg aagcgaggaa aataacccgg	14700
cgctggagaa taggtgaagc agcggattta gttggggttt cttctcaggc tatcagagat	14760
gccgagaaag cagggcgact accgcacccg gatatggaaa ttcgaggacg ggttgagc	aa 14820
cgtgttggtt atacaattga acaaattaat catatgcgtg atgtgtttgg tacgcgattg	14880
cgacgtgctg aagacgtatt tccaccggtg atcggggttg ctgcccataa aggtggcgtt	14940
tacaaaacct cagtttctgt tcatcttgct caggatctgg ctctgaaggg gctacgtgtt	15000
ttgctcgtgg aaggtaacga cccccaggga acagcctcaa tgtatcacgg atgggtacca	15060
gatcttcata ttcatgcaga agacactctc ctgcctttct atcttgggga aaaggacgat	15120
gtcacttatg caataaagcc cacttgctgg ccggggcttg acattattcc ttcctgtctg	15180
gctctgcacc gtattgaaac tgagttaatg ggcaaatttg atgaaggtaa actgcccacc	15240

15300 gatecacace tgatgeteeg aetggeeatt gaaactgttg eteatgaeta tgatgteata 15360 gttattgaca gegegectaa eetgggtate ggeacgatta atgtegtatg tgetgetgat 15420 gtgctgattg ttcccacgcc tgctgagttg tttgactaca cctccgcact gcagtttttc gatatgcttc gtgatctgct caagaacgtt gatcttaaag ggttcgagcc tgatgtacgt 15480 15540 attttgctta ccaaatacag caatagtaat ggctctcagt ccccgtggat ggaggagcaa 15600 attcgggatg cctggggaag catggttcta aaaaatgttg tacgtgaaac ggatgaagtt 15660 ggtaaaggtc agatccggat gagaactgtt tttgaacagg ccattgatca acgctcttca 15720 actggtgcct ggagaaatgc tctttctatt tgggaacctg tctgcaatga aattttcgat 15780 cgtctgatta aaccacgctg ggagattaga taatgaagcg tgcgcctgtt attccaaaac 15840 atacgctcaa tactcaaccg gttgaagata cttcgttatc gacaccagct gccccgatgg tggattcgtt aattgcgcgc gtaggagtaa tggctcgcgg taatgccatt actttgcctg 15900 15960 tatgtggtcg ggatgtgaag tttactcttg aagtgctccg gggtgatagt gttgagaaga cctctcgggt atggtcaggt aatgaacgtg accaggagct gcttactgag gacgcactgg 16020 16080 atgateteat ecettettit etaetgaetg gteaacagae aceggegtte ggtegaagag tatctggtgt catagaaatt gccgatggga gtcgccgtcg taaagctgct gcacttaccg 16140 aaagtgatta tcgtgttctg gttggcgagc tggatgatga gcagatggct gcattatcca 16200 16260 gattgggtaa cgattatcgc ccaacaagtg cttatgaacg tggtcagcgt tatgcaagcc 16320 gattgcagaa tgaatttgct ggaaatattt ctgcgctggc tgatgcggaa aatatttcac

16380 gtaagattat tacccgctgt atcaacaccg ccaaattgcc taaatcagtt gttgctcttt 16440 tttctcaccc cggtgaacta tctgcccggt caggtgatgc acttcaaaaa gcctttacag 16500 ataaagagga attacttaag cagcaggcat ctaaccttca tgagcagaaa aaagctgggg 16560 tgatatttga agctgaagaa gttatcactc ttttaacttc tgtgcttaaa acgtcatctg 16620 catcaagaac tagtttaagc tcacgacatc agtttgctcc tggagcgaca gtattgtata 16680 agggcgataa aatggtgctt aacctggaca ggtctcgtgt tccaactgag tgtatagaga 16740 aaattgaggc cattcttaag gaacttgaaa agccagcacc ctgatgcgac cacgttttag 16800 tctacgttta tctgtcttta cttaatgtcc tttgttacag gccagaaagc ataactggcc 16860 tgaatattct ctctgggccc actgttccac ttgtatcgtc ggtctgataa tcagactggg 16920 accacggtcc cactcgtatc gtcggtctga ttattagtct gggaccacgg tcccactcgt 16980 atcgtcggtc tgattattag tctgggacca cggtcccact cgtatcgtcg gtctgataat cagactggga ccacggtccc actcgtatcg tcggtctgat tattagtctg ggaccatggt 17040 17100 cccactcgta tcgtcggtct gattattagt ctgggaccac ggtcccactc gtatcgtcgg tctgattatt agtctggaac cacggtccca ctcgtatcgt cggtctgatt attagtctgg 17160 17220 gaccacggtc ccactcgtat cgtcggtctg attattagtc tgggaccacg atcccactcg tgttgtcggt ctgattatcg gtctgggacc acggtcccac ttgtattgtc gatcagacta 17280 17340 tcagcgtgag actacgattc catcaatgcc tgtcaagggc aagtattgac atgtcgtcgt 17400 aacctgtaga acggagtaac ctcggtgtgc ggttgtatgc ctgctgtgga ttgctgctgt

17460 gtcctgctta tccacaacat tttgcgcacg gttatgtgga caaaatacct ggttacccag 17520 geegtgeegg caegttaace gggetgeate egatgeaagt gtgtegetgt egacgagete 17580 gcgagctcgg acatgaggtt gccccgtatt cagtgtcgct gatttgtatt gtctgaagtt gtttttacgt taagttgatg cagatcaatt aatacgatac ctgcgtcata attgattatt 17640 17700 tgacgtggtt tgatggcctc cacgcacgtt gtgatatgta gatgataatc attatcactt 17760 tacgggtcct ttccggtgat ccgacaggtt acggggcggc gacctcgcgg gttttcgcta 17820 tttatgaaaa ttttccggtt taaggcgttt ccgttcttct tcgtcataac ttaatgtttt 17880 tatttaaaat accetetgaa aagaaaggaa acgacaggtg etgaaagega gettittgge 17940 ctctgtcgtt tcctttctct gtttttgtcc gtggaatgaa caatggaagt ccgagctcat 18000 cgctaataac ttcgtatagc atacattata cgaagttata ttcgatgcgg cgctgaggtc 18060 tgcctcgtga agaaggtgtt gctgactcat accaggcctg aatcgcccca tcatccagcc 18120 agaaagtgag ggagccacgg ttgatgagag ctttgttgta ggtggaccag ttggtgattt 18180 tgaacttttg ctttgccacg gaacggtctg cgttgtcggg aagatgcgtg atctgatcct 18240 tcaactcagc aaaagttcga tttattcaac aaagccacgt gtctcaaaat ctctgatgtt 18300 acattgcaca agataaaaat atatcatcat gaacaataaa actgtctgct tacataaaca 18360 gtaatacaag gggtgttatg agccatattc aacgggaaac gtcttgctcg acgatgataa 18420 gctgtcaaac atgagaattg ggtcgtcaat atgctaaaac gcggcatacc ccgcgtattc 18480 ccactagtta attaacctgc agggggctgt tagaggtctt ccctagtcca actatagcgt

atggacatal	tgtcgttaga acgcggctac aattaataca taaccttatg tatcatacac	18540	
atacgattta	ggggacacta tag	1856	3
<210>	45		
<211>	18565		
<212>	DNA		
<213>	Artificial Sequence		
<220>			
<223>	sequence for pBACsp6/JVFLx/Xbal		
:2"			
<400>	45		
agaagtttat	ctgtgtgaac ttcttggctt agtatcgttg agaagaatcg agagattagt	60	
gcagtttaaa	cagtttttta gaacggaaga taaccatgac taaaaaacca ggagggcccg	120	
gtaaaaacc	g ggctatcaat atgctgaaac gcggcctacc ccgcgtattc ccactagtgg	180	
gagtgaaga	ng ggtagtaatg agcttgttgg acggcagagg accagtacgt ttcgtgctgg	240	
ctcttatcac	gttcttcaag tttacagcat tagccccgac caaggcgctt ttaggccgat	300	
ggaaagca	gt ggaaaagagt gtggcaatga aacatcttac tagtttcaaa cgagaacttg	360	
gaacactca	t tgacgccgtg aacaagcggg gcagaaagca aaacaaaaga ggaggaaat	g	420
aaggctcaa	t catgtggctc gcgagtttgg cagttgtcat agcttgtgta ggagccatga	480	
agttgtcaaa	tttccaaggg aagcttttga tgaccattaa caacacggac attgcagacg	540	
tcatcgtgat	tcctacctca aaaggagaga acagatgctg ggtccgggca atcgatgtcg	600	

gctacatgtg tgaggacact atcacgtacg aatgtcctaa gcttaccatg ggcaatgatc

720 cagaggatgt ggattgctgg tgtgacaacc aagaagtcta cgtccaatat ggacggtgca 780 cgcggaccag gcattccaag cgaagcagga ggtccgtgtc ggtccaaaca catggggaga 840 gttcactagt gaataaaaaa gaggcttggc tggattcaac gaaagccaca cgatatctca 900 tgaaaactga gaactggatc ataaggaatc ctggctatgc tttcctggcg gcggtacttg 960 gctggatgct tggcagtaac aatggtcaac gcgtggtgtt taccatcctc ctgctgttgg 1020 tcgctccggc ttacagtttt aattgtctgg gaatgggcaa ccgtgacttc atagaaggag 1080 ccagtggagc cacttgggtg gacttagtgc tagaaggaga tagctgcttg acaatcatgg 1140 caaacgacaa accaacattg gacgtccgca tgattaacat cgaagccagc caacttgctg 1200 aggtcagaag ctactgctat catgcttcag tcactgacat ctcgacggtg gctcggtgcc 1260 ccacgactgg agaagcccac aacgagaagc gagctgatag tagctatgtg tgcaaacaag 1320 gtttcactga tcgtgggtgg ggcaacggat gtggactttt cgggaaggga agcattgaca 1380 catgtgcaaa attctcctgc accagtaagg cgattgggag aacaatccag ccagaaaaca 1440 tcaaatacga agttggcatt tttgtgcatg gaaccaccac ctcggaaaac catgggaatt 1500 attcagcgca agtaggggcg tcccaggcgg caaagtttac agtaacaccc aatgctcctt 1560 cgataaccct caaacttggt gactacggag aagtcacact ggactgtgaa ccaaggagtg 1620 gactgaacac tgaagcgttt tacgtcatga ccgtggggtc aaagtcattt ctggtccata 1680 gggaatggtt tcatgacctc gctctcccct ggacgtcccc ttcgagcaca gcgtggagaa 1740 acagagaact cctcatggaa tttgaagagg cgcacgccac aaaacagtcc gttgttgctc

ttgggtcaca ggaaggaggc ctccatcagg cgctggcagg agccatcgtg gtggagtact	1800
caagctcagt gaagttaaca tcaggccacc tgaaatgtag gctgaaaatg gacaaactgg	1860
ctctgaaagg cacaacctat ggcatgtgta cagaaaaatt ctcgttcgcg aaaaatccgg	1920
cggacactgg ccacggaaca gttgtcattg aactctccta ttctgggagt gatggcccct	1980
gcaaaattcc gattgtctcc gttgcgagcc tcaatgacat gacccccgtt gggcggctgg	2040
tgacagtgaa ccccttcgtc gcgacttcca gtgccaactc aaaggtgctg gtcgagatgg	2100
aaccccctt cggagactcc tacatcgtag ttggaagggg agacaagcag atcaaccacc	2160
attggcataa agctggaagc acgctgggca aggctttttc aacaactttg aagggagctc	2220
aaagactggc agcgttgggc gacacagcct gggactttgg ctctattgga ggggtcttca	2280
actccatagg aaaggccgtt caccaagtgt ttggtggcgc tttcagaaca ctctttgggg	2340
gaatgtcttg gatcacacaa gggttaatgg gtgccctact actctggatg ggcatcaacg	2400
cacgagatcg atcaattgct ttggccttct tggccacagg aggtgtgctc gtgttcttag	2460
cgaccaatgt gcatgctgac actggatgtg ccattgacat cgcaagaaaa gagatgagat	2520
gcggaagtgg catcttcgtg cacaacgacg tggaagcctg ggtggatagg tataaatatt	2580
tgccagaaac gcccagatcc ctagcgaaga tcgtccacaa agcgcacaag gaaggcgtgt	2640
gcggagtcag atctgtcact agactggagc accaaatgtg ggaagccgtg cgggacgaat	2700
tgaacgtcct gctcaaagag aatgcagtgg acctcagtgt ggttgtgaac aagcccgtgg	2760
ggagatatcg ctcagcccca aaacgcctgt ccatgacgca agagaagttt gaaatgggct	2820

2880 ggaaagcatg gggaaaaagc attctctttg ccccggaatt ggctaactcc acatttgttg 2940 tagatggacc tgagacaaag gaatgtcctg atgagcacag agcctggaac agcatgcaaa 3000 tcgaagactt cggctttggt atcacatcaa cccgtgtgtg gctgaagatt agagaggaaa 3060 gcactgacga gtgtgatgga gcgatcatag gcacagctgt caaaggacat gtggcagttc 3120 atagtgactt gtcgtactgg attgagagtc gctacaacga cacatggaaa cttgagaggg 3180 cagtctttgg agaggtcaaa tcttgcactt ggccagagac acacactctt tggggagatg 3240 gtgttgagga aagtgaactc atcatcccgc ataccatagc cggaccaaaa agcaagcaca 3300 atcggaggga agggtacaaa acacaaaacc agggaccttg ggacgaaaac ggcatagtct 3360 tggactttga ttattgccca gggacaaaag tcaccatcac agaggattgt ggcaagagag 3420 gcccttcggt cagaaccact actgacagtg gaaagttgat tactgactgg tgctgtcgca 3480 gttgctccct tccgccccta cgattccgga cagaaaatgg ctgctggtac ggaatggaaa 3540 tcagacctgt taggcatgat gaaacaacac tcgtcagatc acaggttgat gctttcaatg gtgaaatggt tgaccctttt cagctgggcc ttctggtgat gtttctggcc acccaggagg 3600 3660 tccttcgcaa gaggtggacg gccagattga ccattcctgc ggttttgggg gccctgcttg 3720 tgctgatgct tgggggcatc acttacactg atttggcgag gtatgtggtg ctagtcgctg 3780 ctgctttcgc agaggccaat aatggaggag acgtcctgca ccttgctttg attgccgttt 3840 ttaagatcca accagctttt ctagtgatga acatgcttag cacgagatgg acgaaccaag 3900 aaaacgtggt cctggtccta ggggctgcct tctttcaatt ggcctcagta gatctgcaaa

3960 toggagtoca oggaatootg aatgoogoog otatagoatg gatgattgtt ogagogatoa 4020 cettececae aaceteetee gteaceatge eagtettage gettetaaet eegggaatga 4080 gggctctata cctagacact tacagaatca tccttctcgt catagggatt tgctcctgc 4140 tgcaagagag gaaaaagacc atggcaaaaa agaaaggagc tgtactcttg ggcttagcgc 4200 tcacatccac tggatggttc tcgcccacca ccatagctgc tggactaatg gtctgcaacc 4260 caaacaagaa gagagggtgg ccagctactg agtttctgtc ggcagtcgga ttgatgtttg 4320 ccatcgtagg tggtttggcc gagttggata ttgaatccat gtcaataccc ttcatgctgg 4380 caggtettat ggcagtgtcc tacgtagtgt caggaaaagc aacagatatg tggctcgaac gggccgccga catcagctgg gagatggatg ctgcaatcac aggaagcagt cggaggctgg 4440 4500 atgtgaaact ggatgatgac ggagattttc acttgattga tgatcccggc gttccatgga aagtttgggt cttgcgcatg tcttgcattg gcttagccgc cctcacgcct tgggccattg 4560 4620 ttcccgccgc tttcggttac tggctcactt taaaaacaac aaaaagaggg ggcgtgtttt 4680 gggacacgcc atccccgaaa ccttgcttaa aaggagacac cactacagga gtctaccgaa 4740 tcatggctag agggattctt ggcacctacc aggctggcgt cggagtcatg tacgagaatg 4800 ttttccacac actatggcac acaactagag gggcagccat tatgagtgga gaaggaaaat 4860 tgacgccata ctggggtagc gtgaaagaag accgcatagc ttacggaggc ccatggagat 4920 ttgatcgaaa atggaatgga acagatgacg tgcaagtgat cgtggtagaa ccggggaagg 4980 ctgcggtaaa catccagaca aaaccaggag tgtttcggac ccccttcggg gaggttgggg

5040 ctgttagcct ggattacccg cgaggaacat ccggctcacc cattctggat tccaatggag 5100 acatcatagg cctatacggc aatggagttg agcttggcga tggctcatac gtcagcgcca 5160 tcgtgcaggg tgaccgtcag gaggaaccag tcccagaagc ttacactcca aacatgttaa 5220 gaaagagaca gatgactgtg ttagatttgc accctggttc agggaaaacc aggaaaattc 5280 tgccacaaat aattaaggat gcaatccagc agcgcctaag aacagctgtg ttggcaccga 5340 cgcgggtggt agcagcagaa atggcagaag ctttgagagg gctcccagta cgataccaaa 5400 cttcagcagt gcagagagag caccaaggga atgaaatagt ggatgtgatg tgccacgcca 5460 ctctgaccca cagattgatg tcaccgaaca gagtgcccaa ctacaatctg tttgtcatgg atgaagctca tttcaccgac ccagccagca tagccgcacg aggatacatc gctaccaagg 5520 5580 tggaattagg agaggcagca gccatcttta tgacagcgac cccgcctgga accacggatc cttttcccga ctcaaatgcc ccaatccatg atttacaaga tgagatacca gacagggcat 5640 5700 ggagcagtgg atacgaatgg atcacagaat atgcgggtaa aaccgtgtgg tttgtggcga 5760 gcgtaaaaat ggggaatgag attgcaatgt gcctccaaag agcgggaaaa aaggtcatcc 5820 aactcaaccg caagtcctat gacacagaat acccaaaatg taagaatgga gactgggatt 5880 ttgtcattac caccgacatc tctgaaatgg gggctaactt cggtgcgagc agggtcatcg 5940 actgcagaaa gagcgtgaaa cccaccatct tagaagaggg agaaggcaga gtcatcctcg 6000 gaaacccatc tcccataacc agtgctagcg cagctcaacg gaggggcaga gtaggcagaa 6060 accccaacca agttggagat gaataccatt atggaggggc taccagtgaa gatgacagta

6120 acctagecea ttggacagag geaaagatea tgttagacaa catacacatg cecaatggge 6180 tggtggccca gctctatgga ccagagaggg aaaaggcttt cacaatggat ggcgaatacc 6240 gtctcagggg tgaagaaaag aaaaacttct tagagctgct taggacggct gaccttccgg 6300 tgtggctggc ctataaggtg gcgtccaatg gcattcagta caccgacaga aagtggtgtt 6360 ttgatgggcc gcgcacgaat gccatactgg aggacaacac cgaggtagag atagtcaccc 6420 ggatgggtga gagaaagatc ctcaagccga gatggcttga tgcaagagta tacgcagatc 6480 accaagccct caagtggttc aaagactttg cagcaggaaa gagatcggcc gttagcttca 6540 tagaggtgct cggtcgcatg cctgagcatt tcatgggaaa gacgcgggaa gctttagaca 6600 ccatgtactt ggtcgcaacg gctgagaaag gtgggaaggc acaccgaatg gctctcgaag agttgccgga tgcactggaa accatcacac ttattgttgc catcactgta atgacaggag 6660 6720 gattetteet actaatgatg cagegaaagg gtatagggaa gatgggtett ggagetetag 6780 tgctcacgct agctaccttc ttcctgtggg cggcagaggt tcctggaacc aaaatagcag 6840 ggaccetget gategeeetg etgetgatgg tggtteteat eccagaaceg gaaaaacaga 6900 ggtcacagac agacaaccaa ctagcggtgt ttctcatctg cgtcttgacc gtggttggag 6960 tggtggcagc aaacgagtac gggatgctag aaaaaaccaa agcagatctc aagagcatgt 7020 ttggcggaaa gacacaggca tcaggactga ctggattgcc aagcatggca ctggacctgc 7080 gtccagccac agcctgggca ctgtatgggg ggagcacagt tgtgctaacc cctcttctga 7140 agcacctgat cacgtcggaa tatgtcacca catcgctagc ctcaattaac tcacaagctg

7200 geteattatt egtettgeca egaggegtge ettteacega tetagacetg acegttggee 7260 tcgtcttcct tggctgctgg ggtcaaatca ccctcacaac gtttttgaca gccatggttc 7320 tggcgacact tcactatggg tacatgctcc ctggatggca agcagaagca ctcagggctg 7380 cccagagaag gacggcggct ggaataatga agaatgccgt tgttgacgga atggtcgcca 7440 ctgatgtgcc tgaactggaa aggactactc ctctgatgca aaagaaagtc ggacaggtgc 7500 tcctcatagg ggtgagcgtg gcagcgtttc tcgtcaaccc taatgtcacc actgtgagag 7560 aagcaggggt gttggtgacg gcggctacgc tcaccttgtg ggataatgga gccagtgccg 7620 tttggaattc caccacagcc acgggactct gccatgtcat gcgaggtagc tacctggctg 7680 gaggetetat tgettggaet ettateaaga aegetgaeaa geeeteettg aaaaggggaa ggcctggggg caggacgcta ggggagcagt ggaaggaaaa actaaatgcc atgagcagag 7740 7800 aagagttttt taaataccgg agagaggcca taatcgaggt ggaccgcact gaagcacgca 7860 gggctagacg tgaaaataac atagtgggag gacatccggt ttcgcgaggc tcagcaaaac 7920 tccgttggct cgtggagaaa ggattcgtct cgccaatagg aaaagtcatt gatctagggt gtgggcgtgg aggatggagc tactacgcag caaccctgaa gaaggtccag gaagtcagag 7980 gatacacgaa aggtggggcg ggacatgaag agccgatgct catgcagagc tacggctgga 8040 acctggtctc cttgaagagt ggagtggatg tgttctacaa accttcagag cctagtgaca 8100 ccctgttctg tgacataggg gaatcctccc caagtccaga agtggaagaa caacgcacac 8160 8220 tacgcgtcct agagatgaca tccgattggt tgcatcgagg acccagagag ttctgcataa

8280 aagttetetg ceettacatg eccaaggtea tagaaaaaat ggaagttetg cagegeeget tcggaggtgg gctagtacgt ctcccctgt cccgaaactc caatcacgag atgtattggg 8340 ttagtggagc cgctggcaat gtggtgcacg ctgtgaacat gaccagccag gtactactgg 8400 8460 ggcgaatgga tcgcacagtg tggagagggc caaagtatga ggaagatgtc aacctaggta 8520 gcggaacaag agccgtggga aagggagaag ttcatagcaa tcaggagaaa atcaagaaga 8580 gaatccagaa gcttaaagaa gaattcgcca caacgtggca caaagaccct gaacacccat 8640 accgcacttg gacataccac ggaagctatg aggtgaaggc tactggctca gccagctctc 8700 tcgtcaacgg agtggtgaag ctcatgagta aaccttggga cgccattgcc aacgtcacca ccatggccat gactgacacc accccttttg gacagcaaag agttttcaag gagaaagttg 8760 8820 acacgaaagc tcctgagcca ccagctggag tcaaggaagt gctcaacgag accaccaact 8880 ggctgtgggc ccacttgtca cgggaaaaaa gaccccgctt gtgcaccaag gaagaattta 8940 taaagaaagt caatagcaac gcggctcttg gagcagtgtt tgctgaacag aatcaatgga gcacggcgcg tgaggctgtg gacgacccgc ggttttggga gatggtcaat gaagagaggg 9000 9060 aaaaccatct gcgaggagag tgtcacacat gtatctacaa catgatggga aaaagagaga 9120 agaagcctgg agagtttgga aaagctaaag ggagcagggc catttggttc atgtggcttg 9180 gagcacggta tcttgagttt gaagctttgg ggttcctgaa tgaagaccac tggctgagcc 9240 gagagaattc aggaggtgga gtagaaggct caggcgtcca aaagttggga tacatcctcc 9300 gtgacatagc aggaaagcaa ggagggaaaa tgtacgctga tgacaccgcc gggtgggaca

9360 ctagaattac tagaactgat ttagaaaatg aagctaaggt gctggagctc ctagatggtg 9420 aacaccgcat gctcgcccgg gccataattg aactgactta caggcacaaa gtggtcaagg 9480 tcatgagacc tgcagcagaa ggaaagaccg tgatggacgt gatatcaaga gaagaccaaa 9540 gggggagtgg acaggtggtc acttatgctc tcaacacttt cacgaacatc gctgtccagc 9600 tcgttaggct gatggaggct gagggggtca ttgggccaca acacttggaa cagctgccta 9660 ggaaaaacaa gatagctgtc aggacttggc tctttgagaa tggagaggag agagtgacca 9720 ggatggcgat cagcggagac gactgtgtcg tcaagccgct ggacgacaga ttcgccacgg 9780 ccctccattt cctcaacgca atgtcaaagg ttagaaaaga catccaggaa tggaagcctt 9840 cgcacggctg gcacgattgg cagcaagttc ccttctgctc taaccacttt caggagattg 9900 tgatgaaaga cggaaggagt atagttgtcc cgtgcagagg acaggatgag ctgataggca 9960 gggctcgcat ctctccagga gctggatgga atgtgaagga cacagcttgc ctggcaaaag 10020 catatgcaca gatgtggcta ctcctatact tccatcgtag ggacctgcgt ctcatggcaa 10080 atgcgatttg ctcagcagtg ccagtggatt gggtgcccac aggcaggaca tcctggtcaa tacactcgaa aggagagtgg atgaccacgg aagacatgct gcaggtctgg aacagagtct 10140 10200 ggattgaaga aaatgaatgg atgatggata agactcccgt cacaagctgg acagacgttc 10260 cgtatgtggg aaagcgtgag gacatctggt gtggcagcct catcggaacg cgttccagag 10320 caacctgggc tgagaacatc tatgcggcga taaaccaggt tagagctgtc attgggaaag 10380 aaaattatgt tgactacatg acctcactca ggagatacga agacgtcttg atccaggaag

10440 acagggtcat ctagtgtgac ttaaggtaga aatgtaaata atgtgaatga gaaaatgcat 10500 gtatatggag tcaggccagc aaaagctgcc accggatact gggtagacgg tgctgcctgc 10560 gtctcagtcc caggaggact gggttaacaa atctgacaac agaaagtgag aaagccctca 10620 gaaccgtctc ggaagtaggt ccctgctcac tggaagttga aagaccaacg tcaggccacg 10680 aatttgtgcc actccgctgg ggagtgcggc ctgcgcagcc ccaggaggac tgggttacca 10740 aagccgttga ggccccacg gcccaagcct cgtctaggat gcaatagacg aggtgtaagg 10800 actagaggtt agaggagacc ccgtggaaac aacaacatgc ggcccaagcc ccctcgaagc 10860 tgtagaggag gtggaaggac tagaggttag aggagacccc gcatttgcat caaacagcat 10920 attgacacct gggaatagac tgggagatct tctgctctat ctcaacatca gctactaggc 10980 acagagcgcc gaagtatgta gctggtggtg aggaagaaca caggatctct agagcggccg 11040 cggaccgact agcctctttt cggccttcgc tgagagggat ttgttcccta ggcctaatta 11100 ttatttttaa ttgcccaata cgtatacgag tgccttttct aattctcgta tactatagtg agtogtatta totagoogoo ogggoogtog accaattoto atgtttgaca gottatoato 11160 11220 gaatttctgc cattcatccg cttattatca cttattcagg cgtagcaacc aggcgtttaa 11280 gggcaccaat aactgcctta aaaaaattac gccccgccct gccactcatc gcagtactgt 11340 tgtaattcat taagcattct gccgacatgg aagccatcac aaacggcatg atgaacctga 11400 atcgccagcg gcatcagcac cttgtcgcct tgcgtataat atttgcccat ggtgaaaacg 11460 ggggcgaaga agttgtccat attggccacg tttaaatcaa aactggtgaa actcacccag

ggattggctg agacgaaaaa catattctca ataaaccctt tagggaaata ggccaggttt	11520
tcaccgtaac acgccacatc ttgcgaatat atgtgtagaa actgccggaa atcgtcgtgg	11580
tattcactcc agagcgatga aaacgtttca gtttgctcat ggaaaacggt gtaacaaggg	11640
tgaacactat cccatatcac cagctcaccg tctttcattg ccatacggaa ttccggatga	11700
gcattcatca ggcgggcaag aatgtgaata aaggccggat aaaacttgtg cttatttttc	11760
tttacggtct ttaaaaaggc cgtaatatcc agctgaacgg tctggttata ggtacattga	11820
gcaactgact gaaatgcctc aaaatgttct ttacgatgcc attgggatat atcaacggtg	11880
gtatatccag tgattttttt ctccatttta gcttccttag ctcctgaaaa tctcgataac 1	1940
tcaaaaaata cgcccggtag tgatcttatt tcattatggt gaaagttgga acctcttacg	12000
tgccgatcaa cgtctcattt tcgccaaaag ttggcccagg gcttcccggt atcaacaggg	12060
acaccaggat ttatttattc tgcgaagtga tcttccgtca caggtattta ttcgcgataa	12120
gctcatggag cggcgtaacc gtcgcacagg aaggacagag aaagcgcgga tctggga	agt 12180
gacggacaga acggtcagga cctggattgg ggaggcggtt gccgccgctg ctgctgac	gg 12240
tgtgacgttc tctgttccgg tcacaccaca tacgttccgc cattcctatg cgatgcacat	12300
gctgtatgcc ggtataccgc tgaaagttct gcaaagcctg atgggacata agtccatcag	12360
ttcaacggaa gtctacacga aggtttttgc gctggatgtg gctgcccggc accgggtgca	12420
gtttgcgatg ccggagtctg atgcggttgc gatgctgaaa caattatcct gagaataaat	12480
gccttggcct ttatatggaa atgtggaact gagtggatat gctgtttttg tctgttaaac	12540

12600 agagaagctg gctgttatcc actgagaagc gaacgaaaca gtcgggaaaa tctcccatta 12660 tcgtagagat ccgcattatt aatctcagga gcctgtgtag cgtttatagg aagtagtgtt 12720 ctgtcatgat gcctgcaagc ggtaacgaaa acgatttgaa tatgccttca ggaacaatag 12780 aaatcttcgt gcggtgttac gttgaagtgg agcggattat gtcagcaatg gacagaacaa 12840 cctaatgaac acagaaccat gatgtggtct gtccttttac agccagtagt gctcgccgca 12900 gtcgagcgac agggcgaagc cctcgagtga gcgaggaagc accagggaac agcacttata 12960 tattctgctt acacacgatg cctgaaaaaa cttcccttgg ggttatccac ttatccacgg 13020 ggatattttt ataattattt tttttatagt ttttagatct tcttttttag agcgccttgt 13080 aggcctttat ccatgctggt tctagagaag gtgttgtgac aaattgccct ttcagtgtga 13140 caaatcaccc tcaaatgaca gtcctgtctg tgacaaattg cccttaaccc tgtgacaaat 13200 tgccctcaga agaagctgtt ttttcacaaa gttatccctg cttattgact cttttttatt tagtgtgaca atctaaaaac ttgtcacact tcacatggat ctgtcatggc ggaaacagcg 13260 13320 gttatcaatc acaagaaacg taaaaatagc ccgcgaatcg tccagtcaaa cgacctcact 13380 gaggcggcat atagtctctc ccgggatcaa aaacgtatgc tgtatctgtt cgttgaccag 13440 atcagaaaat ctgatggcac cctacaggaa catgacggta tctgcgagat ccatgttgct 13500 aaatatgctg aaatattcgg attgacctct gcggaagcca gtaaggatat acggcaggca 13560 ttgaagagtt tcgcggggaa ggaagtggtt ttttatcgcc ctgaagagga tgccggcgat 13620 gaaaaaggct atgaatcttt tccttggttt atcaaacgtg cgcacagtcc atccagaggg

ctttacagtg tacatatcaa cccatatctc attcccttct ttatcgggtt acagaaccgg	13680
tttacgcagt ttcggcttag tgaaacaaaa gaaatcacca atccgtatgc catgcgttta	13740
tacgaatccc tgtgtcagta tcgtaagccg gatggctcag gcatcgtctc tctgaaaatc	13800
gactggatca tagagcgtta ccagctgcct caaagttacc agcgtatgcc tgacttccgc	13860
cgccgcttcc tgcaggtctg tgttaatgag atcaacagca gaactccaat gcgcctctca	13920
tacattgaga aaaagaaagg ccgccagacg actcatatcg tattttcctt ccgcgatatc	13980
acttccatga cgacaggata gtctgagggt tatctgtcac agatttgagg gtggttcgtc	14040
acattigtic tgacctactg agggtaattt gtcacagttt tgctgtttcc ttcagcctgc	14100
atggattttc tcatactttt tgaactgtaa tttttaagga agccaaattt gagggcagtt	14160
tgtcacagtt gatttccttc tctttccctt cgtcatgtga cctgatatcg ggggttagtt	14220
cgtcatcatt gatgagggtt gattatcaca gtttattact ctgaattggc tatccgcgtg	14280
tgtacctcta cctggagttt ttcccacggt ggatatttct tcttgcgctg agcgtaagag	14340
ctatctgaca gaacagttct tctttgcttc ctcgccagtt cgctcgctat gctcggttac	14400
acggctgcgg cgagcgctag tgataataag tgactgaggt atgtgctctt cttatctcct	14460
tttgtagtgt tgctcttatt ttaaacaact ttgcggtttt ttgatgactt tgcgattttg 145	520
ttgttgcttt gcagtaaatt gcaagattta ataaaaaaac gcaaagcaat gattaaagga	14580
tgttcagaat gaaactcatg gaaacactta accagtgcat aaacgctggt catgaaatga	14640
cgaaggctat cgccattgca cagtttaatg atgacagccc ggaagcgagg aaaataac	cc 14700

ggcgctggag aataggtgaa gcagcggatt tagttggggt ttcttctcag gctatcagag 14760 14820 atgccgagaa agcagggcga ctaccgcacc cggatatgga aattcgagga cgggttgagc 14880 aacgtgttgg ttatacaatt gaacaaatta atcatatgcg tgatgtgttt ggtacgcgat tgcgacgtgc tgaagacgta tttccaccgg tgatcggggt tgctgcccat aaaggtggcg 14940 15000 tttacaaaac ctcagtttct gttcatcttg ctcaggatct ggctctgaag gggctacgtg 15060 ttttgctcgt ggaaggtaac gacccccagg gaacagcctc aatgtatcac ggatgggtac 15120 cagatettea tatteatgea gaagacaete teetgeettt etatettggg gaaaaggaeg 15180 atgtcactta tgcaataaag cccacttgct ggccggggct tgacattatt ccttcctgtc 15240 tggctctgca ccgtattgaa actgagttaa tgggcaaatt tgatgaaggt aaactgccca 15300 ccgatccaca cctgatgctc cgactggcca ttgaaactgt tgctcatgac tatgatgtca 15360 tagttattga cagcgcgcct aacctgggta tcggcacgat taatgtcgta tgtgctgctg atgtgctgat tgttcccacg cctgctgagt tgtttgacta cacctccgca ctgcagtttt 15420 15480 tcgatatgct tcgtgatctg ctcaagaacg ttgatcttaa agggttcgag cctgatgtac 15540 gtattttgct taccaaatac agcaatagta atggctctca gtccccgtgg atggaggagc 15600 aaattcggga tgcctgggga agcatggttc taaaaaatgt tgtacgtgaa acggatgaag 15660 ttggtaaagg tcagatccgg atgagaactg tttttgaaca ggccattgat caacgctctt 15720 caactggtgc ctggagaaat gctctttcta tttgggaacc tgtctgcaat gaaattttcg 15780 atcgtctgat taaaccacgc tgggagatta gataatgaag cgtgcgcctg ttattccaaa

acatacgctc aatactcaac cggttgaaga tacttcgtta tcgacaccag ctgccccgat	15840
ggtggattcg ttaattgcgc gcgtaggagt aatggctcgc ggtaatgcca ttactttgcc	15900
tgtatgtggt cgggatgtga agtttactct tgaagtgctc cggggtgata gtgttgagaa	15960
gacctctcgg gtatggtcag gtaatgaacg tgaccaggag ctgcttactg aggacgcact	16020
ggatgatctc atcccttctt ttctactgac tggtcaacag acaccggcgt tcggtcgaag	16080
agtatctggt gtcatagaaa ttgccgatgg gagtcgccgt cgtaaagctg ctgcacttac	16140
cgaaagtgat tatcgtgttc tggttggcga gctggatgat gagcagatgg ctgcattatc	16200
cagattgggt aacgattatc gcccaacaag tgcttatgaa cgtggtcagc gttatgcaag	16260
ccgattgcag aatgaatttg ctggaaatat ttctgcgctg gctgatgcgg aaaatatttc	16320
acgtaagatt attacccgct gtatcaacac cgccaaattg cctaaatcag ttgttgctct	16380
tttttctcac cccggtgaac tatctgcccg gtcaggtgat gcacttcaaa aagcctttac	16440
agataaagag gaattactta agcagcaggc atctaacctt catgagcaga aaaaagctg	g 16500
ggtgatattt gaagctgaag aagttatcac tcttttaact tctgtgctta aaacgtcatc	16560
tgcatcaaga actagtttaa gctcacgaca tcagtttgct cctggagcga cagtattgta	16620
taagggcgat aaaatggtgc ttaacctgga caggtctcgt gttccaactg agtgtataga	16680
gaaaattgag gccattctta aggaacttga aaagccagca ccctgatgcg accacgtttt	16740
agtctacgtt tatctgtctt tacttaatgt cctttgttac aggccagaaa gcataactgg	16800
cetgaatatt etetetggge ecaetgttee aettgtateg teggtetgat aateagaetg	16860

ggaccacggt cccactcgta tcgtcggtct gattattagt ctgggaccac ggtcccactc	16920
gtatcgtcgg tctgattatt agtctgggac cacggtccca ctcgtatcgt cggtctgata	16980
atcagactgg gaccacggtc ccactcgtat cgtcggtctg attattagtc tgggaccatg	17040
gtcccactcg tatcgtcggt ctgattatta gtctgggacc acggtcccac tcgtatcgtc	17100
ggtctgatta ttagtctgga accacggtcc cactcgtatc gtcggtctga ttattagtct	17160
gggaccacgg tcccactcgt atcgtcggtc tgattattag tctgggacca cgatcccact	17220
cgtgttgtcg gtctgattat cggtctggga ccacggtccc acttgtattg tcgatcagac	17280
tatcagcgtg agactacgat tccatcaatg cctgtcaagg gcaagtattg acatgtcgtc	17340
gtaacctgta gaacggagta acctcggtgt gcggttgtat gcctgctgtg gattgctgct	17400
gtgtcctgct tatccacaac attttgcgca cggttatgtg gacaaaatac ctggttaccc	17460
aggccgtgcc ggcacgttaa ccgggctgca tccgatgcaa gtgtgtcgct gtcgacgag	17520
tcgcgagctc ggacatgagg ttgccccgta ttcagtgtcg ctgatttgta ttgtctgaag	17580
ttgtttttac gttaagttga tgcagatcaa ttaatacgat acctgcgtca taattgatta	17640
tttgacgtgg tttgatggcc tccacgcacg ttgtgatatg tagatgataa tcattatcac	17700
tttacgggtc ctttccggtg atccgacagg ttacggggcg gcgacctcgc gggttttcgc	17760
tatttatgaa aattttccgg tttaaggcgt ttccgttctt cttcgtcata acttaatgtt 17	7820
tttatttaaa ataccctctg aaaagaaagg aaacgacagg tgctgaaagc gagctttttg	17880
geetetgteg ttteetttet etgtttttgt eegtggaatg aacaatggaa gteegagete	17940

atcgctaata acttcgtata gcatacatta tacgaagtta tattcgatgc ggcgctgagg	18000
tctgcctcgt gaagaaggtg ttgctgactc ataccaggcc tgaatcgccc catcatccag	18060
ccagaaagtg agggagccac ggttgatgag agctttgttg taggtggacc agttggtgat	18120
tttgaacttt tgctttgcca cggaacggtc tgcgttgtcg ggaagatgcg tgatctgatc	18180
cttcaactca gcaaaagttc gatttattca acaaagccac gtgtctcaaa atctctgatg	18240
ttacattgca caagataaaa atatatcatc atgaacaata aaactgtctg cttacataaa	18300
cagtaataca aggggtgtta tgagccatat tcaacgggaa acgtcttgct cgacgatgat	18360
aagctgtcaa acatgagaat tgggtcgtca atatgctaaa acgcggcata ccccgcgtat	18420
tcccactagt taattaacct gcagggggct gttagaggtc ttccctagtc caactatagc	18480
gtatggacat attgtcgtta gaacgcggct acaattaata cataacctta tgtatcatac	18540
acatacgatt taggggacac tatag	18565

<210> 46

<211> 19038

<212> DNA

<213> Artificial Sequence

<220>

<223> sequence for pBACt7/JVFL/Xhol

<400> 46

agaagtttat ctgtgtgaac ttcttggctt agtatcgttg agaagaatcg agagattagt 60

gcagtttaaa cagttttta gaacggaaga taaccatgac taaaaaacca ggagggcccg	120
gtaaaaaccg ggctatcaat atgctgaaac gcggcctacc ccgcgtattc ccactagtgg	180
gagtgaagag ggtagtaatg agcttgttgg acggcagagg accagtacgt ttcgtgctgg	240
ctcttatcac gttcttcaag tttacagcat tagccccgac caaggcgctt ttaggccgat	300
ggaaagcagt ggaaaagagt gtggcaatga aacatcttac tagtttcaaa cgagaacttg	360
gaacactcat tgacgccgtg aacaagcggg gcagaaagca aaacaaaaga ggaggaaa	tg 420
aaggeteaat eatgtggete gegagtttgg eagttgteat agettgtgta ggageeatga	480
agttgtcaaa tttccaaggg aagcttttga tgaccattaa caacacggac attgcagacg	540
tcatcgtgat tcctacctca aaaggagaga acagatgctg ggtccgggca atcgatgtcg	600
gctacatgtg tgaggacact atcacgtacg aatgtcctaa gcttaccatg ggcaatgatc	660
cagaggatgt ggattgctgg tgtgacaacc aagaagtcta cgtccaatat ggacggtgca	720
cgcggaccag gcattccaag cgaagcagga ggtccgtgtc ggtccaaaca catggggaga	a 780
gttcactagt gaataaaaaa gaggcttggc tggattcaac gaaagccaca cgatatctca	840
tgaaaactga gaactggatc ataaggaatc ctggctatgc tttcctggcg gcggtacttg	900
gctggatgct tggcagtaac aatggtcaac gcgtggtgtt taccatcctc ctgctgttgg	960
tcgctccggc ttacagtttt aattgtctgg gaatgggcaa ccgtgacttc atagaaggag	1020
ccagtggagc cacttgggtg gacttagtgc tagaaggaga tagctgcttg acaatcatgg	1080
caaacgacaa accaacattg gacgtccgca tgattaacat cgaagccagc caacttgctg	1140

aggtcagaag ctactgctat catgcttcag tcactgacat ctcgacggtg gctcggtgcc	1200
ccacgactgg agaagcccac aacgagaagc gagctgatag tagctatgtg tgcaaacaag	1260
gtttcactga tcgtgggtgg ggcaacggat gtggactttt cgggaaggga agcattgaca	1320
catgtgcaaa attctcctgc accagtaagg cgattgggag aacaatccag ccagaaaaca	1380
tcaaatacga agttggcatt tttgtgcatg gaaccaccac ctcggaaaac catgggaatt	1440
attcagcgca agtaggggcg tcccaggcgg caaagtttac agtaacaccc aatgctcctt	1500
cgataaccct caaacttggt gactacggag aagtcacact ggactgtgaa ccaaggagtg	1560
gactgaacac tgaagcgttt tacgtcatga ccgtggggtc aaagtcattt ctggtccata	1620
gggaatggtt teatgacete geteteeeet ggaegteeee ttegageaea gegtggagaa	1680
acagagaact cctcatggaa tttgaagagg cgcacgccac aaaacagtcc gttgttgctc	1740
ttgggtcaca ggaaggaggc ctccatcagg cgctggcagg agccatcgtg gtggagtact	1800
caageteagt gaagttaaca teaggeeace tgaaatgtag getgaaaatg gacaaaetgg	1860
ctctgaaagg cacaacctat ggcatgtgta cagaaaaatt ctcgttcgcg aaaaatccgg	1920
cggacactgg ccacggaaca gttgtcattg aactctccta ttctgggagt gatggcccct	1980
gcaaaattcc gattgtctcc gttgcgagcc tcaatgacat gacccccgtt gggcggctgg	2040
tgacagtgaa ccccttcgtc gcgacttcca gtgccaactc aaaggtgctg gtcgagatgg	2100
aaccccctt cggagactcc tacatcgtag ttggaagggg agacaagcag atcaaccacc	2160
attggcataa agctggaagc acgctgggca aggctttttc aacaactttg aagggagctc	2220

aaagactggc agcgttgggc gacacagcct gggactttgg ctctattgga ggggtcttca	2280
actccatagg aaaggccgtt caccaagtgt ttggtggcgc tttcagaaca ctctttgggg	2340
gaatgtcttg gatcacacaa gggttaatgg gtgccctact actctggatg ggcatcaacg	2400
cacgagateg atcaattget ttggccttet tggccacagg aggtgtgete gtgttettag	2460
cgaccaatgt gcatgctgac actggatgtg ccattgacat cgcaagaaaa gagatgagat	2520
gcggaagtgg catcttcgtg cacaacgacg tggaagcctg ggtggatagg tataaatatt	2580
tgccagaaac gcccagatcc ctagcgaaga tcgtccacaa agcgcacaag gaaggcgtgt	2640
gcggagtcag atctgtcact agactggagc accaaatgtg ggaagccgtg cgggacgaat	2700
tgaacgtcct gctcaaagag aatgcagtgg acctcagtgt ggttgtgaac aagcccgtgg	2760
ggagatatcg ctcagcccca aaacgcctgt ccatgacgca agagaagttt gaaatgggct ~	2820
ggaaagcatg gggaaaaagc attctctttg ccccggaatt ggctaactcc acatttgttg	2880
tagatggacc tgagacaaag gaatgtcctg atgagcacag agcctggaac agcatgcaaa	2940
tcgaagactt cggctttggt atcacatcaa cccgtgtgtg gctgaagatt agagaggaaa	3000
gcactgacga gtgtgatgga gcgatcatag gcacagctgt caaaggacat gtggcagttc	3060
atagtgactt gtcgtactgg attgagagtc gctacaacga cacatggaaa cttgagaggg	3120
cagtctttgg agaggtcaaa tcttgcactt ggccagagac acacactctt tggggagatg	3180
gtgttgagga aagtgaactc atcatcccgc ataccatagc cggaccaaaa agcaagcaca	3240
atcggaggga agggtacaaa acacaaaacc agggaccttg ggacgaaaac ggcatagto	et 3300

tggactttga ttattgccca gggacaaaag tcaccatcac agaggattgt ggcaagagag	3360
gcccttcggt cagaaccact actgacagtg gaaagttgat tactgactgg tgctgtcgca	3420
gttgctccct tccgccccta cgattccgga cagaaaatgg ctgctggtac ggaatggaaa	3480
tcagacctgt taggcatgat gaaacaacac tcgtcagatc acaggttgat gctttcaatg	3540
gtgaaatggt tgaccctttt cagctgggcc ttctggtgat gtttctggcc acccaggagg	3600
teettegeaa gaggtggaeg gecagattga ceatteetge ggttttgggg gecetgettg	3660
tgctgatgct tgggggcatc acttacactg atttggcgag gtatgtggtg ctagtcgctg	3720
ctgctttcgc agaggccaat aatggaggag acgtcctgca ccttgctttg attgccgttt	3780
ttaagatcca accagctttt ctagtgatga acatgcttag cacgagatgg acgaaccaag	3840
aaaacgtggt cctggtccta ggggctgcct tctttcaatt ggcctcagta gatctgcaaa	3900
tcggagtcca cggaatcctg aatgccgccg ctatagcatg gatgattgtt cgagcgatca	3960
cettecceae aacetectee gteaceatge eagtettage gettetaaet eegggaatga	4020
gggctctata cctagacact tacagaatca tccttctcgt catagggatt tgctccctgc	4080
tgcaagagag gaaaaagacc atggcaaaaa agaaaggagc tgtactcttg ggcttagcgc	4140
tcacatccac tggatggttc tcgcccacca ccatagctgc tggactaatg gtctgcaacc	4200
caaacaagaa gagagggtgg ccagctactg agtttctgtc ggcagtcgga ttgatgtttg	4260
ccatcgtagg tggtttggcc gagttggata ttgaatccat gtcaataccc ttcatgctgg	4320
caggtcttat ggcagtgtcc tacgtagtgt caggaaaagc aacagatatg tggctcgaac	4380

4440 gggccgccga catcagctgg gagatggatg ctgcaatcac aggaagcagt cggaggctgg 4500 atgtgaaact ggatgatgac ggagattttc acttgattga tgatcccggc gttccatgga 4560 aagtttgggt cttgcgcatg tcttgcattg gcttagccgc cctcacgcct tgggccattg 4620 ttcccgccgc tttcggttac tggctcactt taaaaacaac aaaaagaggg ggcgtgtttt 4680 gggacacgcc atccccgaaa ccttgcttaa aaggagacac cactacagga gtctaccgaa 4740 tcatggctag agggattctt ggcacctacc aggctggcgt cggagtcatg tacgagaatg ttttccacac actatggcac acaactagag gggcagccat tatgagtgga gaaggaaaat 4800 4860 tgacgccata ctggggtagc gtgaaagaag accgcatagc ttacggaggc ccatggagat 4920 ttgatcgaaa atggaatgga acagatgacg tgcaagtgat cgtggtagaa ccggggaagg 4980 ctgcggtaaa catccagaca aaaccaggag tgtttcggac ccccttcggg gaggttgggg 5040 ctgttagcct ggattacccg cgaggaacat ccggctcacc cattctggat tccaatggag 5100 acatcatagg cctatacggc aatggagttg agcttggcga tggctcatac gtcagcgcca 5160 tcgtgcaggg tgaccgtcag gaggaaccag tcccagaagc ttacactcca aacatgttaa 5220 gaaagagaca gatgactgtg ttagatttgc accetggttc agggaaaacc aggaaaattc 5280 tgccacaaat aattaaggat gcaatccagc agcgcctaag aacagctgtg ttggcaccga 5340 cgcgggtggt agcagcagaa atggcagaag ctttgagagg gctcccagta cgataccaaa 5400 cttcagcagt gcagagagag caccaaggga atgaaatagt ggatgtgatg tgccacgcca 5460 ctctgaccca cagattgatg tcaccgaaca gagtgcccaa ctacaatctg tttgtcatgg

5520 atgaagctca tttcaccgac ccagccagca tagccgcacg aggatacatc gctaccaagg 5580 tggaattagg agaggcagca gccatcttta tgacagcgac cccgcctgga accacggatc 5640 cttttcccga ctcaaatgcc ccaatccatg atttacaaga tgagatacca gacagggcat 5700 ggagcagtgg atacgaatgg atcacagaat atgcgggtaa aaccgtgtgg tttgtggcga 5760 gcgtaaaaat ggggaatgag attgcaatgt gcctccaaag agcgggaaaa aaggtcatcc 5820 aactcaaccg caagtcctat gacacagaat acccaaaatg taagaatgga gactgggatt ttgtcattac caccgacatc tctgaaatgg gggctaactt cggtgcgagc agggtcatcg 5880 5940 actgcagaaa gagcgtgaaa cccaccatct tagaagaggg agaaggcaga gtcatcctcg 6000 gaaacccatc tcccataacc agtgctagcg cagctcaacg gaggggcaga gtaggcagaa 6060 accccaacca agttggagat gaataccatt atggaggggc taccagtgaa gatgacagta acctagccca ttggacagag gcaaagatca tgttagacaa catacacatg cccaatgggc 6120 6180 tggtggccca gctctatgga ccagagaggg aaaaggcttt cacaatggat ggcgaatacc 6240 gtctcagggg tgaagaaaag aaaaacttct tagagctgct taggacggct gaccttccgg 6300 tgtggctggc ctataaggtg gcgtccaatg gcattcagta caccgacaga aagtggtgtt 6360 ttgatgggcc gcgcacgaat gccatactgg aggacaacac cgaggtagag atagtcaccc 6420 ggatgggtga gagaaagatc ctcaagccga gatggcttga tgcaagagta tacgcagatc 6480 accaagccct caagtggttc aaagactttg cagcaggaaa gagatcggcc gttagcttca tagaggtgct cggtcgcatg cctgagcatt tcatgggaaa gacgcgggaa gctttagaca 6540

ccatgtactt ggtcgcaacg gctgagaaag gtgggaaggc acaccgaatg gctctcgaag	6600
agttgccgga tgcactggaa accatcacac ttattgttgc catcactgta atgacaggag	6660
gattetteet actaatgatg cagegaaagg gtatagggaa gatgggtett ggagetetag	6720
tgctcacgct agctaccttc ttcctgtggg cggcagaggt tcctggaacc aaaatagcag	6780
ggaccetget gategeeetg etgetgatgg tggtteteat eecagaaceg gaaaaacaga	6840
ggtcacagac agacaaccaa ctagcggtgt ttctcatctg cgtcttgacc gtggttggag	6900
tggtggcagc aaacgagtac gggatgctag aaaaaaccaa agcagatctc aagagcatgt	6960
ttggcggaaa gacacaggca tcaggactga ctggattgcc aagcatggca ctggacctgc	7020
gtccagccac agcctgggca ctgtatgggg ggagcacagt tgtgctaacc cctcttctga	7080
agcacctgat cacgtcggaa tatgtcacca catcgctagc ctcaattaac tcacaagctg	7140
gctcattatt cgtcttgcca cgaggcgtgc ctttcaccga tctagacctg accgttggcc	7200
tegtetteet tggetgetgg ggteaaatea eecteacaac gtttttgaca gecatggtte	7260
tggcgacact tcactatggg tacatgctcc ctggatggca agcagaagca ctcagggctg	7320
cccagagaag gacggcggct ggaataatga agaatgccgt tgttgacgga atggtcgcca	7380
ctgatgtgcc tgaactggaa aggactactc ctctgatgca aaagaaagtc ggacaggtgc	7440
tcctcatagg ggtgagcgtg gcagcgtttc tcgtcaaccc taatgtcacc actgtgagag	7500
aagcaggggt gttggtgacg gcggctacgc tcaccttgtg ggataatgga gccagtgccg	7560
tttggaattc caccacagcc acgggactct gccatgtcat gcgaggtagc tacctggctg	7620

gaggetetat tgettggaet ettateaaga aegetgaeaa geeeteettg aaaaggggaa	7680
ggcctggggg caggacgcta ggggagcagt ggaaggaaaa actaaatgcc atgagcagag	7740
aagagttttt taaataccgg agagaggcca taatcgaggt ggaccgcact gaagcacgca	7800
gggctagacg tgaaaataac atagtgggag gacatccggt ttcgcgaggc tcagcaaaac	7860
tccgttggct cgtggagaaa ggattcgtct cgccaatagg aaaagtcatt gatctagggt	7920
gtgggcgtgg aggatggagc tactacgcag caaccctgaa gaaggtccag gaagtcagag	7980
gatacacgaa aggtggggcg ggacatgaag agccgatgct catgcagagc tacggctgga	8040
acctggtctc cttgaagagt ggagtggatg tgttctacaa accttcagag cctagtgaca	8100
ccctgttctg tgacataggg gaatcctccc caagtccaga agtggaagaa caacgcacac	8160
tacgcgtcct agagatgaca tccgattggt tgcatcgagg acccagagag ttctgcataa	8220
aagttetetg eeettacatg eecaaggtea tagaaaaaat ggaagttetg eagegeeget	8280
tcggaggtgg gctagtacgt ctccccctgt cccgaaactc caatcacgag atgtattggg	8340
ttagtggagc cgctggcaat gtggtgcacg ctgtgaacat gaccagccag gtactactgg	8400
ggcgaatgga tcgcacagtg tggagagggc caaagtatga ggaagatgtc aacctaggta	8460
gcggaacaag agccgtggga aagggagaag ttcatagcaa tcaggagaaa atcaagaaga	8520
gaatccagaa gcttaaagaa gaattcgcca caacgtggca caaagaccct gaacacccat	8580
accgcacttg gacataccac ggaagctatg aggtgaaggc tactggctca gccagctctc	8640
tcgtcaacgg agtggtgaag ctcatgagta aaccttggga cgccattgcc aacgtcacca	8700

8760 ccatggccat gactgacacc accccttttg gacagcaaag agttttcaag gagaaagttg 8820 acacgaaagc tcctgagcca ccagctggag tcaaggaagt gctcaacgag accaccaact 8880 ggctgtgggc ccacttgtca cgggaaaaaa gaccccgctt gtgcaccaag gaagaattta 8940 taaagaaagt caatagcaac gcggctcttg gagcagtgtt tgctgaacag aatcaatgga 9000 gcacggcgcg tgaggctgtg gacgacccgc ggttttggga gatggtcaat gaagagaggg 9060 aaaaccatct gcgaggagag tgtcacacat gtatctacaa catgatggga aaaagagaga 9120 agaagcetgg agagtttgga aaagctaaag ggagcagggc catttggttc atgtggcttg 9180 gagcacggta tctagagttt gaagctttgg ggttcctgaa tgaagaccac tggctgagcc 9240 gagagaattc aggaggtgga gtagaaggct caggcgtcca aaagttggga tacatcctcc 9300 gtgacatagc aggaaagcaa ggagggaaaa tgtacgctga tgacaccgcc gggtgggaca 9360 ctagaattac tagaactgat ttagaaaatg aagctaaggt gctggagctc ctagatggtg 9420 aacaccgcat gctcgcccgg gccataattg aactgactta caggcacaaa gtggtcaagg 9480 tcatgagacc tgcagcagaa ggaaagaccg tgatggacgt gatatcaaga gaagaccaaa gggggagtgg acaggtggtc acttatgctc tcaacacttt cacgaacatc gctgtccagc 9540 tcgttaggct gatggaggct gagggggtca ttgggccaca acacttggaa cagctgccta 9600 9660 ggaaaaacaa gatagctgtc aggacttggc tctttgagaa tggagaggag agagtgacca 9720 ggatggcgat cagcggagac gactgtgtcg tcaagccgct ggacgacaga ttcgccacgg 9780 ccctccattt cctcaacgca atgtcaaagg ttagaaaaga catccaggaa tggaagcctt

9840 cgcacggctg gcacgattgg cagcaagttc ccttctgctc taaccacttt caggagattg 9900 tgatgaaaga cggaaggagt atagttgtcc cgtgcagagg acaggatgag ctgataggca 9960 gggctcgcat ctctccagga gctggatgga atgtgaagga cacagcttgc ctggcaaaag 10020 catatgcaca gatgtggcta ctcctatact tccatcgtag ggacctgcgt ctcatggcaa 10080 atgcgatttg ctcagcagtg ccagtggatt gggtgcccac aggcaggaca tcctggtcaa 10140 tacactcgaa aggagagtgg atgaccacgg aagacatgct gcaggtctgg aacagagtct 10200 ggattgaaga aaatgaatgg atgatggata agactcccgt cacaagctgg acagacgttc 10260 cgtatgtggg aaagcgtgag gacatctggt gtggcagcct catcggaacg cgttccagag 10320 caacctgggc tgagaacatc tatgcggcga taaaccaggt tagagctgtc attgggaaag 10380 aaaattatgt tgactacatg acctcactca ggagatacga agacgtcttg atccaggaag 10440 acagggtcat ctagtgtgac ttaaggtaga aatgtaaata atgtgaatga gaaaatgcat 10500 gtatatggag tcaggccagc aaaagctgcc accggatact gggtagacgg tgctgcctgc 10560 gtctcagtcc caggaggact gggttaacaa atctgacaac agaaagtgag aaagccctca 10620 gaaccgtctc ggaagtaggt ccctgctcac tggaagttga aagaccaacg tcaggccacg 10680 aatttgtgcc actccgctgg ggagtgcggc ctgcgcagcc ccaggaggac tgggttacca 10740 aagccgttga ggccccacg gcccaagcct cgtctaggat gcaatagacg aggtgtaagg 10800 actagaggtt agaggagacc ccgtggaaac aacaacatgc ggcccaagcc ccctcgaagc 10860 tgtagaggag gtggaaggac tagaggttag aggagacccc gcatttgcat caaacagcat

10920 attgacacct gggaatagac tgggagatct tctgctctat ctcaacatca gctactaggc 10980 acagagcgcc gaagtatgta gctggtggtg aggaagaaca caggatctcg agcggccgcg 11040 gaccgactag cctcttttcg gccttcgctg agagggattt gttccctagg cctaattatt 11100 atttttaatt gcccaatacg tatacgagtg ccttttctaa ttctcgtata ctatagtgag 11160 tcgtattatc tagccgcccg ggccgtcgac caattctcat gtttgacagc ttatcatcga 11220 atttctgcca ttcatccgct tattatcact tattcaggcg tagcaaccag gcgtttaagg gcaccaataa ctgccttaaa aaaattacgc cccgccctgc cactcatcgc agtactgttg 11280 11340 taattcatta agcattctgc cgacatggaa gccatcacaa acggcatgat gaacctgaat 11400 cgccagcggc atcagcacct tgtcgccttg cgtataatat ttgcccatgg tgaaaacggg 11460 ggcgaagaag ttgtccatat tggccacgtt taaatcaaaa ctggtgaaac tcacccaggg attggctgag acgaaaaaca tattctcaat aaacccttta gggaaatagg ccaggttttc 11520 11580 accgtaacac gccacatctt gcgaatatat gtgtagaaac tgccggaaat cgtcgtggta 11640 ttcactccag agcgatgaaa acgtttcagt ttgctcatgg aaaacggtgt aacaagggtg 11700 aacactatcc catatcacca gctcaccgtc tttcattgcc atacggaatt ccggatgagc 11760 attcatcagg cgggcaagaa tgtgaataaa ggccggataa aacttgtgct tattttctt 11820 tacggtcttt aaaaaggccg taatatccag ctgaacggtc tggttatagg tacattgagc 11880 aactgactga aatgcctcaa aatgttcttt acgatgccat tgggatatat caacggtggt 11940 atatccagtg attittitct ccattitagc ttccttagct cctgaaaatc tcgataactc

12000 aaaaaatacg cccggtagtg atcttatttc attatggtga aagttggaac ctcttacgtg 12060 ccgatcaacg tctcattttc gccaaaagtt ggcccagggc ttcccggtat caacagggac accaggattt atttattctg cgaagtgatc ttccgtcaca ggtatttatt cgcgataagc 12120 12180 tcatggagcg gcgtaaccgt cgcacaggaa ggacagagaa agcgcggatc tgggaagtga 12240 cggacagaac ggtcaggacc tggattgggg aggcggttgc cgccgctgct gctgacggtg 12300 tgacgttctc tgttccggtc acaccacata cgttccgcca ttcctatgcg atgcacatgc tgtatgccgg tataccgctg aaagttctgc aaagcctgat gggacataag tccatcagtt 12360 12420 caacggaagt ctacacgaag gtttttgcgc tggatgtggc tgcccggcac cgggtgcagt 12480 ttgcgatgcc ggagtctgat gcggttgcga tgctgaaaca attatcctga gaataaatgc 12540 cttggccttt atatggaaat gtggaactga gtggatatgc tgtttttgtc tgttaaacag 12600 agaagctggc tgttatccac tgagaagcga acgaaacagt cgggaaaatc tcccattatc 12660 gtagagatcc gcattattaa tctcaggagc ctgtgtagcg tttataggaa gtagtgttct 12720 gtcatgatgc ctgcaagcgg taacgaaaac gatttgaata tgccttcagg aacaatagaa 12780 atcttcgtgc ggtgttacgt tgaagtggag cggattatgt cagcaatgga cagaacaacc 12840 taatgaacac agaaccatga tgtggtctgt ccttttacag ccagtagtgc tcgccgcagt 12900 cgagcgacag ggcgaagccc tcgagtgagc gaggaagcac cagggaacag cacttatata 12960 ttctgcttac acacgatgcc tgaaaaaact tcccttgggg ttatccactt atccacgggg 13020 atatttttat aattatttt tttatagttt ttagatcttc ttttttagag cgccttgtag

13080 gcctttatcc atgctggttc tagagaaggt gttgtgacaa attgcccttt cagtgtgaca 13140 aatcaccctc aaatgacagt cctgtctgtg acaaattgcc cttaaccctg tgacaaattg 13200 ccctcagaag aagctgtttt ttcacaaagt tatccctgct tattgactct tttttattta 13260 gtgtgacaat ctaaaaactt gtcacacttc acatggatct gtcatggcgg aaacagcggt 13320 tatcaatcac aagaaacgta aaaatagccc gcgaatcgtc cagtcaaacg acctcactga 13380 ggcggcatat agtetetece gggatcaaaa acgtatgetg tatetgtteg ttgaccagat cagaaaatct gatggcaccc tacaggaaca tgacggtatc tgcgagatcc atgttgctaa 13440 13500 atatgctgaa atattcggat tgacctctgc ggaagccagt aaggatatac ggcaggcatt gaagagtttc gcggggaagg aagtggtttt ttatcgccct gaagaggatg ccggcgatga 13560 13620 aaaaggctat gaatcttttc cttggtttat caaacgtgcg cacagtccat ccagagggct ttacagtgta catatcaacc catatctcat tcccttcttt atcgggttac agaaccggtt 13680 13740 tacgcagttt cggcttagtg aaacaaaaga aatcaccaat ccgtatgcca tgcgtttata 13800 cgaatccctg tgtcagtatc gtaagccgga tggctcaggc atcgtctctc tgaaaatcga 13860 ctggatcata gagcgttacc agctgcctca aagttaccag cgtatgcctg acttccgccg 13920 ccgcttcctg caggtctgtg ttaatgagat caacagcaga actccaatgc gcctctcata 13980 cattgagaaa aagaaaggcc gccagacgac tcatatcgta ttttccttcc gcgatatcac 14040 ttccatgacg acaggatagt ctgagggtta tctgtcacag atttgagggt ggttcgtcac 14100 attigtictg acctactgag ggtaattigt cacagittig ctgtticctt cagcctgcat

ggattttctc atactttttg aactgtaatt tttaaggaag ccaaatttga gggcagtttg 14160
tcacagttga tttccttctc tttcccttcg tcatgtgacc tgatatcggg ggttagttcg 14220
tcatcattga tgagggttga ttatcacagt ttattactct gaattggcta tccgcgtgtg 14280
tacctctacc tggagttttt cccacggtgg atatttcttc ttgcgctgag cgtaagagct 14340
atctgacaga acagttcttc tttgcttcct cgccagttcg ctcgctatgc tcggttacac 14400
ggctgcggcg agcgctagtg ataataagtg actgaggtat gtgctcttct tatctccttt 14460
tgtagtgttg ctcttatttt aaacaacttt gcggtttttt gatgactttg cgattttgtt 14520
gttgctttgc agtaaattgc aagatttaat aaaaaaacgc aaagcaatga ttaaaggatg 14580
ttcagaatga aactcatgga aacacttaac cagtgcataa acgctggtca tgaaatgacg 14640
aaggctatcg ccattgcaca gtttaatgat gacagcccgg aagcgaggaa aataacccgg 14700
aaggctatcg ccattgcaca gtttaatgat gacagcccgg aagcgaggaa aataacccgg 14700 cgctggagaa taggtgaagc agcggattta gttggggttt cttctcaggc tatcagagat 14760
aayyttatog coatigoada gittaatgat gadagoodgg dagogaagaaa bossaa 555
cgctggagaa taggtgaagc agcggattta gttggggttt cttctcaggc tatcagagat 14760
cgctggagaa taggtgaagc agcggattta gttggggttt cttctcaggc tatcagagat 14760 gccgagaaag cagggcgact accgcacccg gatatggaaa ttcgaggacg ggttgagcaa 14820
cgctggagaa taggtgaagc agcggattta gttggggttt cttctcaggc tatcagagat 14760 gccgagaaag cagggcgact accgcacccg gatatggaaa ttcgaggacg ggttgagcaa 14820 cgtgttggtt atacaattga acaaattaat catatgcgtg atgtgtttgg tacgcgattg 14880
cgctggagaa taggtgaagc agcggattta gttggggttt cttctcaggc tatcagagat 14760 gccgagaaag cagggcgact accgcacccg gatatggaaa ttcgaggacg ggttgagcaa 14820 cgtgttggtt atacaattga acaaattaat catatgcgtg atgtgtttgg tacgcgattg 14880 cgacgtgctg aagacgtatt tccaccggtg atcggggttg ctgcccataa aggtggcgtt 14940
cgctggagaa taggtgaagc agcggattta gttggggttt cttctcaggc tatcagagat 14760 gccgagaaag cagggcgact accgcacccg gatatggaaa ttcgaggacg ggttgagcaa 14820 cgtgttggtt atacaattga acaaattaat catatgcgtg atgtgtttgg tacgcgattg 14880 cgacgtgctg aagacgtatt tccaccggtg atcggggttg ctgcccataa aggtggcgtt 14940 tacaaaacct cagtttctgt tcatcttgct caggatctgg ctctgaaggg gctacgtgtt 15000

gctctgcacc gtattgaaac tgagttaatg ggcaaatttg atgaaggtaa actgcccacc 15240 15300 gatccacacc tgatgctccg actggccatt gaaactgttg ctcatgacta tgatgtcata 15360 gttattgaca gcgcgcctaa cctgggtatc ggcacgatta atgtcgtatg tgctgctgat gtgctgattg ttcccacgcc tgctgagttg tttgactaca cctccgcact gcagtttttc 15420 15480 gatatgette gtgatetget caagaaegtt gatettaaag ggttegagee tgatgtaegt 15540 attttgctta ccaaatacag caatagtaat ggctctcagt ccccgtggat ggaggagcaa 15600 attogggatg cotggggaag catggttota aaaaatgttg tacgtgaaac ggatgaagtt 15660 ggtaaaggtc agatccggat gagaactgtt tttgaacagg ccattgatca acgctcttca 15720 actggtgcct ggagaaatgc tctttctatt tgggaacctg tctgcaatga aattttcgat 15780 cgtctgatta aaccacgctg ggagattaga taatgaagcg tgcgcctgtt attccaaaac 15840 atacgctcaa tactcaaccg gttgaagata cttcgttatc gacaccagct gccccgatgg tggattcgtt aattgcgcgc gtaggagtaa tggctcgcgg taatgccatt actttgcctg 15900 15960 tatgtggtcg ggatgtgaag tttactcttg aagtgctccg gggtgatagt gttgagaaga 16020 cctctcgggt atggtcaggt aatgaacgtg accaggagct gcttactgag gacgcactgg 16080 atgateteat ecettetttt etaetgaetg gteaacagae aceggegtte ggtegaagag tatctggtgt catagaaatt gccgatggga gtcgccgtcg taaagctgct gcacttaccg 16140 16200 aaagtgatta tcgtgttctg gttggcgagc tggatgatga gcagatggct gcattatcca 16260 gattgggtaa cgattatcgc ccaacaagtg cttatgaacg tggtcagcgt tatgcaagcc

16320 gattgcagaa tgaatttgct ggaaatattt ctgcgctggc tgatgcggaa aatatttcac 16380 gtaagattat tacccgctgt atcaacaccg ccaaattgcc taaatcagtt gttgctcttt 16440 tttctcaccc cggtgaacta tctgcccggt caggtgatgc acttcaaaaa gcctttacag 16500 ataaagagga attacttaag cagcaggcat ctaaccttca tgagcagaaa aaagctgggg 16560 tgatatttga agctgaagaa gttatcactc ttttaacttc tgtgcttaaa acgtcatctg 16620 catcaagaac tagtttaagc tcacgacatc agtttgctcc tggagcgaca gtattgtata agggcgataa aatggtgctt aacctggaca ggtctcgtgt tccaactgag tgtatagaga 16680 16740 aaattgaggc cattcttaag gaacttgaaa agccagcacc ctgatgcgac cacgttttag 16800 tctacgttta tctgtcttta cttaatgtcc tttgttacag gccagaaagc ataactggcc 16860 tgaatattct ctctgggccc actgttccac ttgtatcgtc ggtctgataa tcagactggg accacggtcc cactcgtatc gtcggtctga ttattagtct gggaccacgg tcccactcgt 16920 16980 atcgtcggtc tgattattag tctgggacca cggtcccact cgtatcgtcg gtctgataat 17040 cagactggga ccacggtccc actcgtatcg tcggtctgat tattagtctg ggaccatggt 17100 cccactcgta tcgtcggtct gattattagt ctgggaccac ggtcccactc gtatcgtcgg 17160 tctgattatt agtctggaac cacggtccca ctcgtatcgt cggtctgatt attagtctgg 17220 gaccacggtc ccactcgtat cgtcggtctg attattagtc tgggaccacg atcccactcg 17280 tgttgtcggt ctgattatcg gtctgggacc acggtcccac ttgtattgtc gatcagacta 17340 tcagcgtgag actacgattc catcaatgcc tgtcaagggc aagtattgac atgtcgtcgt

aacctgtaga acggagtaac ctcggtgtgc ggttgtatgc ctgctgtgga ttgctgctgt	17400
gtcctgctta tccacaacat tttgcgcacg gttatgtgga caaaatacct ggttacccag	17460
gccgtgccgg cacgttaacc gggctgcatc cgatgcaagt gtgtcgctgt cgacgagcto	17520
gcgagctcgg acatgaggtt gccccgtatt cagtgtcgct gatttgtatt gtctgaagtt	17580
gtttttacgt taagttgatg cagatcaatt aatacgatac ctgcgtcata attgattatt	17640
tgacgtggtt tgatggcctc cacgcacgtt gtgatatgta gatgataatc attatcactt	17700
tacgggtcct ttccggtgat ccgacaggtt acggggcggc gacctcgcgg gttttcgcta	17760
tttatgaaaa ttttccggtt taaggcgttt ccgttcttct tcgtcataac ttaatgtttt 17	820
tatttaaaat accctctgaa aagaaaggaa acgacaggtg ctgaaagcga gctttttggc	17880
ctctgtcgtt tcctttctct gtttttgtcc gtggaatgaa caatggaagt ccgagctcat	17940
cgctaataac ttcgtatagc atacattata cgaagttata ttcgatgcgg cgctgaggtc	18000
cgctaataac ttcgtatagc atacattata cgaagttata ttcgatgcgg cgctgaggtc tgcctcgtga agaaggtgtt gctgactcat accaggcctg aatcgcccca tcatccagcc	
	18000
tgcctcgtga agaaggtgtt gctgactcat accaggcctg aatcgcccca tcatccagcc	18000 18060
tgcctcgtga agaaggtgtt gctgactcat accaggcctg aatcgcccca tcatccagcc agaaagtgag ggagccacgg ttgatgagag ctttgttgta ggtggaccag ttggtgattt	18000 18060 18120
tgcctcgtga agaaggtgtt gctgactcat accaggcctg aatcgcccca tcatccagcc agaaagtgag ggagccacgg ttgatgagag ctttgttgta ggtggaccag ttggtgattt tgaacttttg ctttgccacg gaacggtctg cgttgtcggg aagatgcgtg atctgatcct	18000 18060 18120 18180
tgcctcgtga agaaggtgtt gctgactcat accaggcctg aatcgcccca tcatccagcc agaaagtgag ggagccacgg ttgatgagag ctttgttgta ggtggaccag ttggtgattt tgaacttttg ctttgccacg gaacggtctg cgttgtcggg aagatgcgtg atctgatcct tcaactcagc aaaagttcga tttattcaac aaagccacgt gtctcaaaat ctctgatgtt	18000 18060 18120 18180 18240

ccactagtta atcgtacgaa ttccgtatgg caatgaaaga cggtgagctg gtgatatggg	18480
atagtgttca cccttgttac accgttttcc atgagcaaac tgaaacgttt tcatcgctct	18540
ggagtgaata ccacgacgat ttccggcagt ttctacacat atattcgcaa gatgtggcgt	18600
gttacggtga aaacctggcc tatttcccta aagggtttat tgagaatatg tttttcgtct	18660
cagccaatcc ctgggtgagt ttcaccagtt ttgatttaaa cgtggccaat atggacaact	18720
tcttcgcccc cgttttcacc atgggcaaat attatacgca aggcgacaag gtgctgatgc	18780
cgctggcgat tcaggttcat catgccgttt gtgatggctt ccatgtcggc agaatgctta	18840
atgaattaca acagtactgc gatgagtggc agggcggggc gtaattttt taaggcagtt	18900
attggtgccc ttaaacgcct ggttgctacg cctgaataag tgataataag cggatgaatg	18960
gcagaaattc gatgataagc tgtcaaacat gagaattggt cgacggcccg ggcggctag	a 19020
taatacgact cactatag	19038

<210> 47

<211> 19038

<212> DNA

<213> Artificial Sequence

<220>

<223> sequence for pBACt7/JVFLx/XhoI

<400> 47

agaagtttat ctgtgtgaac ttcttggctt agtatcgttg agaagaatcg agagattagt

gcagtttaaa cagttttta gaacggaaga taaccatgac taaaaaaacca ggagggcccg 120

60

180 gtaaaaaccg ggctatcaat atgctgaaac gcggcctacc ccgcgtattc ccactagtgg 240 gagtgaagag ggtagtaatg agcttgttgg acggcagagg accagtacgt ttcgtgctgg 300 ctcttatcac gttcttcaag tttacagcat tagccccgac caaggcgctt ttaggccgat 360 ggaaagcagt ggaaaagagt gtggcaatga aacatcttac tagtttcaaa cgagaacttg 420 gaacactcat tgacgccgtg aacaagcggg gcagaaagca aaacaaaaga ggaggaaatg 480 aaggeteaat eatgtggete gegagtttgg eagttgteat agettgtgta ggageeatga 540 agttgtcaaa tttccaaggg aagcttttga tgaccattaa caacacggac attgcagacg 600 tcatcgtgat tcctacctca aaaggagaga acagatgctg ggtccgggca atcgatgtcg 660 gctacatgtg tgaggacact atcacgtacg aatgtcctaa gcttaccatg ggcaatgatc 720 cagaggatgt ggattgctgg tgtgacaacc aagaagtcta cgtccaatat ggacggtgca 780 cgcggaccag gcattccaag cgaagcagga ggtccgtgtc ggtccaaaca catggggaga 840 gttcactagt gaataaaaaa gaggcttggc tggattcaac gaaagccaca cgatatctca tgaaaactga gaactggatc ataaggaatc ctggctatgc tttcctggcg gcggtacttg 900 960 getggatget tggcagtaac aatggtcaac gegtggtgtt taccateete etgetgttgg 1020 tcgctccggc ttacagtttt aattgtctgg gaatgggcaa ccgtgacttc atagaaggag 1080 ccagtggagc cacttgggtg gacttagtgc tagaaggaga tagctgcttg acaatcatgg caaacgacaa accaacattg gacgtccgca tgattaacat cgaagccagc caacttgctg 1140 1200 aggtcagaag ctactgctat catgcttcag tcactgacat ctcgacggtg gctcggtgcc

1260 ccacgactgg agaagcccac aacgagaagc gagctgatag tagctatgtg tgcaaacaag 1320 gtttcactga tcgtgggtgg ggcaacggat gtggactttt cgggaaggga agcattgaca 1380 catgtgcaaa attctcctgc accagtaagg cgattgggag aacaatccag ccagaaaaca 1440 tcaaatacga agttggcatt tttgtgcatg gaaccaccac ctcggaaaac catgggaatt attcagcgca agtaggggcg tcccaggcgg caaagtttac agtaacaccc aatgctcctt 1500 cgataaccct caaacttggt gactacggag aagtcacact ggactgtgaa ccaaggagtg 1560 1620 gactgaacac tgaagcgttt tacgtcatga ccgtggggtc aaagtcattt ctggtccata 1680 gggaatggtt tcatgacctc gctctcccct ggacgtcccc ttcgagcaca gcgtggagaa acagagaact cctcatggaa tttgaagagg cgcacgccac aaaacagtcc gttgttgctc 1740 ttgggtcaca ggaaggaggc ctccatcagg cgctggcagg agccatcgtg gtggagtact 1800 caagctcagt gaagttaaca tcaggccacc tgaaatgtag gctgaaaatg gacaaactgg 1860 1920 ctctgaaagg cacaacctat ggcatgtgta cagaaaaatt ctcgttcgcg aaaaatccgg cggacactgg ccacggaaca gttgtcattg aactctccta ttctgggagt gatggcccct 1980 2040 gcaaaattcc gattgtctcc gttgcgagcc tcaatgacat gacccccgtt gggcggctgg 2100 tgacagtgaa ccccttcgtc gcgacttcca gtgccaactc aaaggtgctg gtcgagatgg 2160 aaccccctt cggagactcc tacatcgtag ttggaagggg agacaagcag atcaaccacc 2220 attggcataa agctggaagc acgctgggca aggctttttc aacaactttg aagggagctc 2280 aaagactggc agcgttgggc gacacagcct gggactttgg ctctattgga ggggtcttca

2340 actocatagg aaaggccgtt caccaagtgt ttggtggcgc tttcagaaca ctctttgggg 2400 gaatgtettg gateacaeaa gggttaatgg gtgeectaet actetggatg ggeateaaeg 2460 cacgagateg ateaattget ttggcettet tggccacagg aggtgtgete gtgttettag 2520 2580 gcggaagtgg catcttcgtg cacaacgacg tggaagcctg ggtggatagg tataaatatt 2640 tgccagaaac gcccagatcc ctagcgaaga tcgtccacaa agcgcacaag gaaggcgtgt 2700 geggagteag atetgteact agaetggage accaaatgtg ggaageegtg egggaegaat tgaacgtcct gctcaaagag aatgcagtgg acctcagtgt ggttgtgaac aagcccgtgg 2760 2820 ggagatatcg ctcagcccca aaacgcctgt ccatgacgca agagaagttt gaaatgggct 2880 ggaaagcatg gggaaaaagc attetetttg eeeeggaatt ggetaactee acatttgttg 2940 tagatggacc tgagacaaag gaatgtcctg atgagcacag agcctggaac agcatgcaaa 3000 tcgaagactt cggctttggt atcacatcaa cccgtgtgtg gctgaagatt agagaggaaa 3060 gcactgacga gtgtgatgga gcgatcatag gcacagctgt caaaggacat gtggcagttc 3120 atagtgactt gtcgtactgg attgagagtc gctacaacga cacatggaaa cttgagaggg 3180 cagtetttgg agaggteaaa tettgeaett ggeeagagae acaeactett tggggagatg gtgttgagga aagtgaactc atcatcccgc ataccatagc cggaccaaaa agcaagcaca 3240 3300 atcggaggga agggtacaaa acacaaaacc agggaccttg ggacgaaaac ggcatagtct 3360 tggactttga ttattgccca gggacaaaag tcaccatcac agaggattgt ggcaagagag

3420 gcccttcggt cagaaccact actgacagtg gaaagttgat tactgactgg tgctgtcgca 3480 gttgctccct tccgccccta cgattccgga cagaaaatgg ctgctggtac ggaatggaaa 3540 tcagacctgt taggcatgat gaaacaacac tcgtcagatc acaggttgat gctttcaatg 3600 gtgaaatggt tgaccctttt cagctgggcc ttctggtgat gtttctggcc acccaggagg 3660 tccttcgcaa gaggtggacg gccagattga ccattcctgc ggttttgggg gccctgcttg tgctgatgct tgggggcatc acttacactg atttggcgag gtatgtggtg ctagtcgctg 3720 3780 ctgctttcgc agaggccaat aatggaggag acgtcctgca ccttgctttg attgccgttt ttaagatcca accagctttt ctagtgatga acatgcttag cacgagatgg acgaaccaag 3840 aaaacgtggt cctggtccta ggggctgcct tctttcaatt ggcctcagta gatctgcaaa 3900 3960 tcggagtcca cggaatcctg aatgccgccg ctatagcatg gatgattgtt cgagcgatca 4020 cettecceae aaceteetee gteaceatge eagtettage gettetaaet eegggaatga gggctctata cctagacact tacagaatca tccttctcgt catagggatt tgctccctgc 4080 4140 tgcaagagag gaaaaagacc atggcaaaaa agaaaggagc tgtactcttg ggcttagcgc 4200 tcacatccac tggatggttc tcgcccacca ccatagctgc tggactaatg gtctgcaacc 4260 caaacaagaa gagagggtgg ccagctactg agtttctgtc ggcagtcgga ttgatgtttg 4320 ccatcgtagg tggtttggcc gagttggata ttgaatccat gtcaataccc ttcatgctgg 4380 caggicttat ggcagtgtcc tacgtagtgt caggaaaagc aacagatatg tggctcgaac 4440 gggccgccga catcagctgg gagatggatg ctgcaatcac aggaagcagt cggaggctgg

4500 atgtgaaact ggatgatgac ggagattttc acttgattga tgatcccggc gttccatgga 4560 aagtttgggt cttgcgcatg tcttgcattg gcttagccgc cctcacgcct tgggccattg 4620 ttcccgccgc tttcggttac tggctcactt taaaaacaac aaaaagaggg ggcgtgtttt 4680 gggacacgcc atccccgaaa ccttgcttaa aaggagacac cactacagga gtctaccgaa 4740 tcatggctag agggattctt ggcacctacc aggctggcgt cggagtcatg tacgagaatg ttttccacac actatggcac acaactagag gggcagccat tatgagtgga gaaggaaaat 4800 4860 tgacgccata ctggggtagc gtgaaagaag accgcatagc ttacggaggc ccatggagat ttgatcgaaa atggaatgga acagatgacg tgcaagtgat cgtggtagaa ccggggaagg 4920 ctgcggtaaa catccagaca aaaccaggag tgtttcggac ccccttcggg gaggttgggg 4980 5040 ctgttagcct ggattacccg cgaggaacat ccggctcacc cattctggat tccaatggag 5100 acatcatagg cctatacggc aatggagttg agcttggcga tggctcatac gtcagcgcca tcgtgcaggg tgaccgtcag gaggaaccag tcccagaagc ttacactcca aacatgttaa 5160 gaaagagaca gatgactgtg ttagatttgc accctggttc agggaaaaacc aggaaaattc 5220 5280 tgccacaaat aattaaggat gcaatccagc agcgcctaag aacagctgtg ttggcaccga 5340 cgcgggtggt agcagcagaa atggcagaag ctttgagagg gctcccagta cgataccaaa 5400 cttcagcagt gcagagagag caccaaggga atgaaatagt ggatgtgatg tgccacgcca 5460 ctctgaccca cagattgatg tcaccgaaca gagtgcccaa ctacaatctg tttgtcatgg 5520 atgaagetea ttteacegae eeagecagea tageegeaeg aggatacate getaecaagg

5580 tggaattagg agaggcagca gccatcttta tgacagcgac cccgcctgga accacggatc 5640 cttttcccga ctcaaatgcc ccaatccatg atttacaaga tgagatacca gacagggcat 5700 ggagcagtgg atacgaatgg atcacagaat atgcgggtaa aaccgtgtgg tttgtggcga 5760 gcgtaaaaat ggggaatgag attgcaatgt gcctccaaag agcgggaaaa aaggtcatcc 5820 aactcaaccg caagtcctat gacacagaat acccaaaatg taagaatgga gactgggatt 5880 ttgtcattac caccgacatc tctgaaatgg gggctaactt cggtgcgagc agggtcatcg 5940 actgcagaaa gagcgtgaaa cccaccatct tagaagaggg agaaggcaga gtcatcctcg 6000 gaaacccatc tcccataacc agtgctagcg cagctcaacg gaggggcaga gtaggcagaa accccaacca agttggagat gaataccatt atggaggggc taccagtgaa gatgacagta 6060 6120 acctagecea ttggacagag geaaagatea tgttagacaa catacacatg eecaatggge 6180 tggtggccca gctctatgga ccagagaggg aaaaggcttt cacaatggat ggcgaatacc 6240 gtctcagggg tgaagaaaag aaaaacttct tagagctgct taggacggct gaccttccgg tgtggctggc ctataaggtg gcgtccaatg gcattcagta caccgacaga aagtggtgtt 6300 6360 ttgatgggcc gcgcacgaat gccatactgg aggacaacac cgaggtagag atagtcaccc 6420 ggatgggtga gagaaagatc ctcaagccga gatggcttga tgcaagagta tacgcagatc 6480 accaagccct caagtggttc aaagactttg cagcaggaaa gagatcggcc gttagcttca 6540 tagaggtgct cggtcgcatg cctgagcatt tcatgggaaa gacgcgggaa gctttagaca 6600 ccatgtactt ggtcgcaacg gctgagaaag gtgggaaggc acaccgaatg gctctcgaag

6660 agttgccgga tgcactggaa accatcacac ttattgttgc catcactgta atgacaggag 6720 gattcttcct actaatgatg cagcgaaagg gtatagggaa gatgggtctt ggagctctag 6780 tgctcacgct agctaccttc ttcctgtggg cggcagaggt tcctggaacc aaaatagcag 6840 ggaccctgct gatcgccctg ctgctgatgg tggttctcat cccagaaccg gaaaaacaga 6900 ggtcacagac agacaaccaa ctagcggtgt ttctcatctg cgtcttgacc gtggttggag 6960 tggtggcagc aaacgagtac gggatgctag aaaaaaccaa agcagatctc aagagcatgt 7020 ttggcggaaa gacacaggca tcaggactga ctggattgcc aagcatggca ctggacctgc 7080 gtccagccac agcctgggca ctgtatgggg ggagcacagt tgtgctaacc cctcttctga agcacctgat cacgtcggaa tatgtcacca catcgctagc ctcaattaac tcacaagctg 7140 geteattatt egtettgeea egaggegtge ettteacega tetagaeetg acegttggee 7200 7260 tcgtcttcct tggctgctgg ggtcaaatca ccctcacaac gtttttgaca gccatggttc 7320 tggcgacact tcactatggg tacatgctcc ctggatggca agcagaagca ctcagggctg cccagagaag gacggcggct ggaataatga agaatgccgt tgttgacgga atggtcgcca 7380 7440 ctgatgtgcc tgaactggaa aggactactc ctctgatgca aaagaaagtc ggacaggtgc 7500 tcctcatagg ggtgagcgtg gcagcgtttc tcgtcaaccc taatgtcacc actgtgagag 7560 aagcaggggt gttggtgacg gcggctacgc tcaccttgtg ggataatgga gccagtgccg 7620 tttggaattc caccacagcc acgggactct gccatgtcat gcgaggtagc tacctggctg 7680 gaggetetat tgettggaet ettateaaga aegetgaeaa geeeteettg aaaaggggaa

7740 ggcctggggg caggacgcta ggggagcagt ggaaggaaaa actaaatgcc atgagcagag 7800 aagagtttt taaataccgg agagaggcca taatcgaggt ggaccgcact gaagcacgca 7860 gggctagacg tgaaaataac atagtgggag gacatccggt ttcgcgaggc tcagcaaaac 7920 tccgttggct cgtggagaaa ggattcgtct cgccaatagg aaaagtcatt gatctagggt 7980 gtgggcgtgg aggatggagc tactacgcag caaccctgaa gaaggtccag gaagtcagag 8040 gatacacgaa aggtggggcg ggacatgaag agccgatgct catgcagagc tacggctgga acctggtctc cttgaagagt ggagtggatg tgttctacaa accttcagag cctagtgaca 8100 8160 ccctgttctg tgacataggg gaatcctccc caagtccaga agtggaagaa caacgcacac tacgcgtcct agagatgaca tccgattggt tgcatcgagg acccagagag ttctgcataa 8220 8280 aagttctctg cccttacatg cccaaggtca tagaaaaaat ggaagttctg cagcgccgct 8340 tcggaggtgg gctagtacgt ctcccctgt cccgaaactc caatcacgag atgtattggg 8400 ttagtggagc cgctggcaat gtggtgcacg ctgtgaacat gaccagccag gtactactgg 8460 ggcgaatgga tcgcacagtg tggagagggc caaagtatga ggaagatgtc aacctaggta 8520 gcggaacaag agccgtggga aagggagaag ttcatagcaa tcaggagaaa atcaagaaga 8580 gaatccagaa gcttaaagaa gaattcgcca caacgtggca caaagaccct gaacacccat 8640 accgcacttg gacataccac ggaagctatg aggtgaaggc tactggctca gccagctctc 8700 tcgtcaacgg agtggtgaag ctcatgagta aaccttggga cgccattgcc aacgtcacca 8760 ccatggccat gactgacacc accccttttg gacagcaaag agttttcaag gagaaagttg

8820 acacgaaagc tcctgagcca ccagctggag tcaaggaagt gctcaacgag accaccaact 8880 ggctgtgggc ccacttgtca cgggaaaaaa gaccccgctt gtgcaccaag gaagaattta 8940 taaagaaagt caatagcaac gcggctcttg gagcagtgtt tgctgaacag aatcaatgga 9000 gcacggcgcg tgaggctgtg gacgacccgc ggttttggga gatggtcaat gaagagaggg 9060 aaaaccatct gcgaggagag tgtcacacat gtatctacaa catgatggga aaaagagaga 9120 agaagcctgg agagtttgga aaagctaaag ggagcagggc catttggttc atgtggcttg 9180 gagcacggta tcttgagttt gaagctttgg ggttcctgaa tgaagaccac tggctgagcc 9240 gagagaattc aggaggtgga gtagaaggct caggcgtcca aaagttggga tacatcctcc gtgacatagc aggaaagcaa ggagggaaaa tgtacgctga tgacaccgcc gggtgggaca 9300 9360 ctagaattac tagaactgat ttagaaaatg aagctaaggt gctggagctc ctagatggtg 9420 aacaccgcat gctcgcccgg gccataattg aactgactta caggcacaaa gtggtcaagg 9480 tcatgagacc tgcagcagaa ggaaagaccg tgatggacgt gatatcaaga gaagaccaaa gggggagtgg acaggtggtc acttatgctc tcaacacttt cacgaacatc gctgtccagc 9540 9600 tcgttaggct gatggaggct gagggggtca ttgggccaca acacttggaa cagctgccta 9660 ggaaaaacaa gatagctgtc aggacttggc tctttgagaa tggagaggag agagtgacca 9720 ggatggcgat cagcggagac gactgtgtcg tcaagccgct ggacgacaga ttcgccacgg 9780 ccctccattt cctcaacgca atgtcaaagg ttagaaaaga catccaggaa tggaagcctt 9840 cgcacggctg gcacgattgg cagcaagttc ccttctgctc taaccacttt caggagattg

tgatgaaaga cggaaggagt atagttgtcc cgtgcagagg acaggatgag ctgataggca 9900 gggctcgcat ctctccagga gctggatgga atgtgaagga cacagcttgc ctggcaaaag 9960 10020 catatgcaca gatgtggcta ctcctatact tccatcgtag ggacctgcgt ctcatggcaa atgcgatttg ctcagcagtg ccagtggatt gggtgcccac aggcaggaca tcctggtcaa 10080 10140 tacactcgaa aggagagtgg atgaccacgg aagacatgct gcaggtctgg aacagagtct 10200 ggattgaaga aaatgaatgg atgatggata agactcccgt cacaagctgg acagacgttc cgtatgtggg aaagcgtgag gacatctggt gtggcagcct catcggaacg cgttccagag 10260 caacctgggc tgagaacatc tatgcggcga taaaccaggt tagagctgtc attgggaaag 10320 aaaattatgt tgactacatg acctcactca ggagatacga agacgtcttg atccaggaag 10380 10440 acagggtcat ctagtgtgac ttaaggtaga aatgtaaata atgtgaatga gaaaatgcat 10500 gtatatggag tcaggccagc aaaagctgcc accggatact gggtagacgg tgctgcctgc 10560 gtctcagtcc caggaggact gggttaacaa atctgacaac agaaagtgag aaagccctca gaaccgtctc ggaagtaggt ccctgctcac tggaagttga aagaccaacg tcaggccacg 10620 10680 aatttgtgcc actccgctgg ggagtgcggc ctgcgcagcc ccaggaggac tgggttacca 10740 aagccgttga ggccccacg gcccaagcct cgtctaggat gcaatagacg aggtgtaagg actagaggtt agaggagacc ccgtggaaac aacaacatgc ggcccaagcc ccctcgaagc 10800 10860 tgtagaggag gtggaaggac tagaggttag aggagacccc gcatttgcat caaacagcat 10920 attgacacct gggaatagac tgggagatct tctgctctat ctcaacatca gctactaggc

acagagcgcc gaagtatgta gctggtggtg aggaagaaca caggatctcg agcggccgc	g 10980
gaccgactag cetetttteg geettegetg agagggattt gtteeetagg eetaattatt	11040
atttttaatt gcccaatacg tatacgagtg ccttttctaa ttctcgtata ctatagtgag 11	1100
tegtattate tageegeegg ggeegtegae caatteteat gtttgacage ttateatega	11160
attictgcca ticatccgct tattatcact tattcaggcg tagcaaccag gcgtttaagg	11220
gcaccaataa ctgccttaaa aaaattacgc cccgccctgc cactcatcgc agtactgttg	11280
taattcatta agcattctgc cgacatggaa gccatcacaa acggcatgat gaacctgaat	11340
cgccagcggc atcagcacct tgtcgccttg cgtataatat ttgcccatgg tgaaaacggg	11400
ggcgaagaag ttgtccatat tggccacgtt taaatcaaaa ctggtgaaac tcacccaggg	11460
attggctgag acgaaaaaca tattctcaat aaacccttta gggaaatagg ccaggttttc	11520
accgtaacac gccacatctt gcgaatatat gtgtagaaac tgccggaaat cgtcgtggta	11580
ttcactccag agcgatgaaa acgtttcagt ttgctcatgg aaaacggtgt aacaagggtg	11640
aacactatcc catatcacca gctcaccgtc tttcattgcc atacggaatt ccggatgagc	11700
attcatcagg cgggcaagaa tgtgaataaa ggccggataa aacttgtgct tatttttctt	11760
tacggtcttt aaaaaggccg taatatccag ctgaacggtc tggttatagg tacattgagc	11820
aactgactga aatgcctcaa aatgttcttt acgatgccat tgggatatat caacggtggt	11880
atatccagtg attittitct ccattitage tteettaget eetgaaaate tegataacte 119)40
aaaaaatacg cccggtagtg atcttatttc attatggtga aagttggaac ctcttacgtg	12000

12060 ccgatcaacg tctcattttc gccaaaagtt ggcccagggc ttcccggtat caacagggac 12120 accaggattt atttattctg cgaagtgatc ttccgtcaca ggtatttatt cgcgataagc 12180 tcatggagcg gcgtaaccgt cgcacaggaa ggacagagaa agcgcggatc tgggaagtga 12240 cggacagaac ggtcaggacc tggattgggg aggcggttgc cgccgctgct gctgacggtg 12300 tgacgttctc tgttccggtc acaccacata cgttccgcca ttcctatgcg atgcacatgc 12360 tgtatgccgg tataccgctg aaagttctgc aaagcctgat gggacataag tccatcagtt 12420 caacggaagt ctacacgaag gtttttgcgc tggatgtggc tgcccggcac cgggtgcagt 12480 ttgcgatgcc ggagtctgat gcggttgcga tgctgaaaca attatcctga gaataaatgc cttggccttt atatggaaat gtggaactga gtggatatgc tgtttttgtc tgttaaacag 12540 12600 agaagctggc tgttatccac tgagaagcga acgaaacagt cgggaaaatc tcccattatc gtagagatcc gcattattaa tctcaggagc ctgtgtagcg tttataggaa gtagtgttct 12660 12720 gtcatgatgc ctgcaagcgg taacgaaaac gatttgaata tgccttcagg aacaatagaa atcttcgtgc ggtgttacgt tgaagtggag cggattatgt cagcaatgga cagaacaacc 12780 taatgaacac agaaccatga tgtggtctgt ccttttacag ccagtagtgc tcgccgcagt 12840 12900 cgagcgacag ggcgaagccc tcgagtgagc gaggaagcac cagggaacag cacttatata 12960 ttctgcttac acacgatgcc tgaaaaaact tcccttgggg ttatccactt atccacgggg 13020 atatttttat aattatttt tttatagttt ttagatcttc ttttttagag cgccttgtag

gcctttatcc atgctggttc tagagaaggt gttgtgacaa attgcccttt cagtgtgaca

13080

13140 aatcaccctc aaatgacagt cctgtctgtg acaaattgcc cttaaccctg tgacaaattg 13200 ccctcagaag aagctgtttt ttcacaaagt tatccctgct tattgactct tttttattta 13260 gtgtgacaat ctaaaaactt gtcacacttc acatggatct gtcatggcgg aaacagcggt 13320 tatcaatcac aagaaacgta aaaatagccc gcgaatcgtc cagtcaaacg acctcactga 13380 ggcggcatat agtctctccc gggatcaaaa acgtatgctg tatctgttcg ttgaccagat 13440 cagaaaatct gatggcaccc tacaggaaca tgacggtatc tgcgagatcc atgttgctaa atatgctgaa atattcggat tgacctctgc ggaagccagt aaggatatac ggcaggcatt 13500 13560 gaagagtttc gcggggaagg aagtggtttt ttatcgccct gaagaggatg ccggcgatga aaaaggctat gaatcttttc cttggtttat caaacgtgcg cacagtccat ccagagggct 13620 ttacagtgta catatcaacc catatctcat tcccttcttt atcgggttac agaaccggtt 13680 13740 tacgcagttt cggcttagtg aaacaaaaga aatcaccaat ccgtatgcca tgcgtttata 13800 cgaatccctg tgtcagtatc gtaagccgga tggctcaggc atcgtctctc tgaaaatcga 13860 ctggatcata gagcgttacc agctgcctca aagttaccag cgtatgcctg acttccgccg 13920 ccgcttcctg caggtctgtg ttaatgagat caacagcaga actccaatgc gcctctcata 13980 cattgagaaa aagaaaggcc gccagacgac tcatatcgta ttttccttcc gcgatatcac 14040 ttccatgacg acaggatagt ctgagggtta tctgtcacag atttgagggt ggttcgtcac 14100 attigtictg acctactgag ggtaattigt cacagtittg ctgtticctt cagcctgcat 14160 ggattttctc atactttttg aactgtaatt tttaaggaag ccaaatttga gggcagtttg

tcacagttga tttccttctc tttcccttcg tcatgtgacc tgatatcggg ggttagttcg	14220
tcatcattga tgagggttga ttatcacagt ttattactct gaattggcta tccgcgtgtg	14280
tacctctacc tggagttttt cccacggtgg atatttcttc ttgcgctgag cgtaagagct	14340
atetgacaga acagttette tttgetteet egecagtteg etegetatge teggttacae	14400
ggctgcggcg agcgctagtg ataataagtg actgaggtat gtgctcttct tatctccttt	14460
tgtagtgttg ctcttatttt aaacaacttt gcggtttttt gatgactttg cgattttgtt 14	1 520
gttgctttgc agtaaattgc aagatttaat aaaaaaacgc aaagcaatga ttaaaggat	g 14580
ttcagaatga aactcatgga aacacttaac cagtgcataa acgctggtca tgaaatga	cg 14640
aaggctatcg ccattgcaca gtttaatgat gacagcccgg aagcgaggaa aataacc	cgg 14700
cgctggagaa taggtgaagc agcggattta gttggggttt cttctcaggc tatcagagat	14760
gccgagaaag cagggcgact accgcacccg gatatggaaa ttcgaggacg ggttga	ngcaa 14820
cgtgttggtt atacaattga acaaattaat catatgcgtg atgtgtttgg tacgcgattg	14880
cgacgtgctg aagacgtatt tccaccggtg atcggggttg ctgcccataa aggtggcgtt	14940
tacaaaaacct cagtttctgt tcatcttgct caggatctgg ctctgaaggg gctacgtgtt	15000
ttgctcgtgg aaggtaacga cccccaggga acagcctcaa tgtatcacgg atgggtac	ca 15060
gatcttcata ttcatgcaga agacactctc ctgcctttct atcttgggga aaaggacgat	15120
gtcacttatg caataaagcc cacttgctgg ccggggcttg acattattcc ttcctgtctg	15180
gctctgcacc gtattgaaac tgagttaatg ggcaaatttg atgaaggtaa actgcccacc	15240

15300 gatccacacc tgatgctccg actggccatt gaaactgttg ctcatgacta tgatgtcata 15360 gttattgaca gcgcgcctaa cctgggtatc ggcacgatta atgtcgtatg tgctgctgat 15420 gtgctgattg ttcccacgcc tgctgagttg tttgactaca cctccgcact gcagtttttc 15480 gatatgcttc gtgatctgct caagaacgtt gatcttaaag ggttcgagcc tgatgtacgt 15540 attttgctta ccaaatacag caatagtaat ggctctcagt ccccgtggat ggaggagcaa attogggatg cotggggaag catggttota aaaaatgttg tacgtgaaac ggatgaagtt 15600 ggtaaaggtc agatccggat gagaactgtt tttgaacagg ccattgatca acgctcttca 15660 15720 actggtgcct ggagaaatgc tctttctatt tgggaacctg tctgcaatga aattttcgat cgtctgatta aaccacgctg ggagattaga taatgaagcg tgcgcctgtt attccaaaac 15780 atacgctcaa tactcaaccg gttgaagata cttcgttatc gacaccagct gccccgatgg 15840 tggattcgtt aattgcgcgc gtaggagtaa tggctcgcgg taatgccatt actttgcctg 15900 15960 tatgtggtcg ggatgtgaag tttactcttg aagtgctccg gggtgatagt gttgagaaga cctctcgggt atggtcaggt aatgaacgtg accaggagct gcttactgag gacgcactgg 16020 16080 atgatctcat cccttctttt ctactgactg gtcaacagac accggcgttc ggtcgaagag 16140 tatctggtgt catagaaatt gccgatggga gtcgccgtcg taaagctgct gcacttaccg 16200 aaagtgatta tcgtgttctg gttggcgagc tggatgatga gcagatggct gcattatcca 16260 gattgggtaa cgattatcgc ccaacaagtg cttatgaacg tggtcagcgt tatgcaagcc 16320 gattgcagaa tgaatttgct ggaaatattt ctgcgctggc tgatgcggaa aatatttcac

16380 gtaagattat tacccgctgt atcaacaccg ccaaattgcc taaatcagtt gttgctcttt 16440 tttctcaccc cggtgaacta tctgcccggt caggtgatgc acttcaaaaa gcctttacag 16500 ataaagagga attacttaag cagcaggcat ctaaccttca tgagcagaaa aaagctgggg 16560 tgatatttga agctgaagaa gttatcactc ttttaacttc tgtgcttaaa acgtcatctg 16620 catcaagaac tagtttaagc tcacgacatc agtttgctcc tggagcgaca gtattgtata 16680 agggcgataa aatggtgctt aacctggaca ggtctcgtgt tccaactgag tgtatagaga 16740 aaattgaggc cattcttaag gaacttgaaa agccagcacc ctgatgcgac cacgttttag 16800 tctacgttta tctgtcttta cttaatgtcc tttgttacag gccagaaagc ataactggcc 16860 tgaatattct ctctgggccc actgttccac ttgtatcgtc ggtctgataa tcagactggg 16920 accaeggtee cactegtate gteggtetga ttattagtet gggaccaegg teccaetegt 16980 atcgtcggtc tgattattag tctgggacca cggtcccact cgtatcgtcg gtctgataat 17040 cagactggga ccacggtccc actcgtatcg tcggtctgat tattagtctg ggaccatggt cccactcgta tcgtcggtct gattattagt ctgggaccac ggtcccactc gtatcgtcgg 17100 17160 tctgattatt agtctggaac cacggtccca ctcgtatcgt cggtctgatt attagtctgg 17220 gaccacggtc ccactcgtat cgtcggtctg attattagtc tgggaccacg atcccactcg 17280 tgttgtcggt ctgattatcg gtctgggacc acggtcccac ttgtattgtc gatcagacta 17340 tcagcgtgag actacgattc catcaatgcc tgtcaagggc aagtattgac atgtcgtcgt aacctgtaga acggagtaac ctcggtgtgc ggttgtatgc ctgctgtgga ttgctgctgt 17400

17460 gtcctgctta tccacaacat tttgcgcacg gttatgtgga caaaatacct ggttacccag gccgtgccgg cacgttaacc gggctgcatc cgatgcaagt gtgtcgctgt cgacgagctc 17520 17580 gcgagctcgg acatgaggtt gccccgtatt cagtgtcgct gatttgtatt gtctgaagtt 17640 gtttttacgt taagttgatg cagatcaatt aatacgatac ctgcgtcata attgattatt tgacgtggtt tgatggcctc cacgcacgtt gtgatatgta gatgataatc attatcactt 17700 17760 tacgggtcct ttccggtgat ccgacaggtt acggggcggc gacctcgcgg gttttcgcta 17820 tttatgaaaa ttttccggtt taaggcgttt ccgttcttct tcgtcataac ttaatgtttt 17880 tatttaaaat accctctgaa aagaaaggaa acgacaggtg ctgaaagcga gctttttggc ctctgtcgtt tcctttctct gtttttgtcc gtggaatgaa caatggaagt ccgagctcat 17940 18000 cgctaataac ttcgtatagc atacattata cgaagttata ttcgatgcgg cgctgaggtc 18060 tgcctcgtga agaaggtgtt gctgactcat accaggcctg aatcgcccca tcatccagcc agaaagtgag ggagccacgg ttgatgagag ctttgttgta ggtggaccag ttggtgattt 18120 tgaacttttg ctttgccacg gaacggtctg cgttgtcggg aagatgcgtg atctgatcct 18180 18240 tcaactcagc aaaagttcga tttattcaac aaagccacgt gtctcaaaat ctctgatgtt acattgcaca agataaaaat atatcatcat gaacaataaa actgtctgct tacataaaca 18300 18360 gtaatacaag gggtgttatg agccatattc aacgggaaac gtcttgctcg acgatgataa 18420 gctgtcaaac atgagaattg ggtcgtcaat atgctaaaac gcggcatacc ccgcgtattc ccactagtta atcgtacgaa ttccgtatgg caatgaaaga cggtgagctg gtgatatggg 18480

atagtgttca cccttgttac accgttttcc atgagcaaac tgaaacgttt tcatcgctct	18540
ggagtgaata ccacgacgat ttccggcagt ttctacacat atattcgcaa gatgtggcgt	18600
gttacggtga aaacctggcc tatttcccta aagggtttat tgagaatatg tttttcgtct	18660
cagccaatcc ctgggtgagt ttcaccagtt ttgatttaaa cgtggccaat atggacaact	18720
tettegeece egtttteace atgggeaaat attataegea aggegacaag gtgetgatge	18780
cgctggcgat tcaggttcat catgccgttt gtgatggctt ccatgtcggc agaatgctta	18840
atgaattaca acagtactgc gatgagtggc agggcggggc gtaattttt taaggcagtt	18900
attggtgccc ttaaacgcct ggttgctacg cctgaataag tgataataag cggatgaatg	18960
gcagaaattc gatgataagc tgtcaaacat gagaattggt cgacggcccg ggcggctag	a 19020
taatacgact cactatag	19038

<210> 48

<211> 19040

<212> DNA

<213> Artificial Sequence

<220>

<223> sequence for pBACt7/JVFLx/Xbal

<400> 48

agaagtttat ctgtgtgaac ttcttggctt agtatcgttg agaagaatcg agagattagt

120

60

gcagtttaaa cagttttta gaacggaaga taaccatgac taaaaaacca ggagggcccg

180 gtaaaaaccg ggctatcaat atgctgaaac gcggcctacc ccgcgtattc ccactagtgg gagtgaagag ggtagtaatg agcttgttgg acggcagagg accagtacgt ttcgtgctgg 240 300 ctcttatcac gttcttcaag tttacagcat tagccccgac caaggcgctt ttaggccgat 360 ggaaagcagt ggaaaagagt gtggcaatga aacatcttac tagtttcaaa cgagaacttg gaacactcat tgacgccgtg aacaagcggg gcagaaagca aaacaaaaga ggaggaaatg 420 aaggeteaat eatgtggete gegagtttgg eagttgteat agettgtgta ggageeatga 480 agttgtcaaa tttccaaggg aagcttttga tgaccattaa caacacggac attgcagacg 540 tcatcgtgat tcctacctca aaaggagaga acagatgctg ggtccgggca atcgatgtcg 600 gctacatgtg tgaggacact atcacgtacg aatgtcctaa gcttaccatg ggcaatgatc 660 720 cagaggatgt ggattgctgg tgtgacaacc aagaagtcta cgtccaatat ggacggtgca 780 cgcggaccag gcattccaag cgaagcagga ggtccgtgtc ggtccaaaca catggggaga 840 gttcactagt gaataaaaaa gaggcttggc tggattcaac gaaagccaca cgatatctca 900 tgaaaactga gaactggatc ataaggaatc ctggctatgc tttcctggcg gcggtacttg 960 gctggatgct tggcagtaac aatggtcaac gcgtggtgtt taccatcctc ctgctgttgg 1020 tcgctccggc ttacagtttt aattgtctgg gaatgggcaa ccgtgacttc atagaaggag 1080 ccagtggagc cacttgggtg gacttagtgc tagaaggaga tagctgcttg acaatcatgg 1140 caaacgacaa accaacattg gacgtccgca tgattaacat cgaagccagc caacttgctg 1200 aggtcagaag ctactgctat catgcttcag tcactgacat ctcgacggtg gctcggtgcc

1260 ccacgactgg agaagcccac aacgagaagc gagctgatag tagctatgtg tgcaaacaag 1320 gtttcactga tcgtgggtgg ggcaacggat gtggactttt cgggaaggga agcattgaca 1380 catgtgcaaa attctcctgc accagtaagg cgattgggag aacaatccag ccagaaaaca tcaaatacga agttggcatt tttgtgcatg gaaccaccac ctcggaaaac catgggaatt 1440 1500 attcagcgca agtaggggcg tcccaggcgg caaagtttac agtaacaccc aatgctcctt 1560 cgataaccct caaacttggt gactacggag aagtcacact ggactgtgaa ccaaggagtg 1620 gactgaacac tgaagcgttt tacgtcatga ccgtggggtc aaagtcattt ctggtccata 1680 gggaatggtt tcatgacctc gctctcccct ggacgtcccc ttcgagcaca gcgtggagaa 1740 acagagaact cctcatggaa tttgaagagg cgcacgccac aaaacagtcc gttgttgctc 1800 ttgggtcaca ggaaggaggc ctccatcagg cgctggcagg agccatcgtg gtggagtact 1860 caagctcagt gaagttaaca tcaggccacc tgaaatgtag gctgaaaatg gacaaactgg 1920 ctctgaaagg cacaacctat ggcatgtgta cagaaaaatt ctcgttcgcg aaaaatccgg 1980 cggacactgg ccacggaaca gttgtcattg aactctccta ttctgggagt gatggcccct 2040 gcaaaattcc gattgtctcc gttgcgagcc tcaatgacat gacccccgtt gggcggctgg 2100 tgacagtgaa ccccttcgtc gcgacttcca gtgccaactc aaaggtgctg gtcgagatgg 2160 aaccccctt cggagactcc tacatcgtag ttggaagggg agacaagcag atcaaccacc 2220 attggcataa agctggaagc acgctgggca aggctttttc aacaactttg aagggagctc 2280 aaagactggc agcgttgggc gacacagcct gggactttgg ctctattgga ggggtcttca

actccatagg aaaggccgtt caccaagtgt ttggtggcgc tttcagaaca ctctttgggg	2340
gaatgtettg gateacacaa gggttaatgg gtgeeetact actetggatg ggeateaaeg	2400
cacgagatcg atcaattgct ttggccttct tggccacagg aggtgtgctc gtgttcttag	2460
cgaccaatgt gcatgctgac actggatgtg ccattgacat cgcaagaaaa gagatgagat	2520
gcggaagtgg catcttcgtg cacaacgacg tggaagcctg ggtggatagg tataaatatt	2580
tgccagaaac gcccagatcc ctagcgaaga tcgtccacaa agcgcacaag gaaggcgtgt	2640
gcggagtcag atctgtcact agactggagc accaaatgtg ggaagccgtg cgggacgaat	2700
tgaacgtcct gctcaaagag aatgcagtgg acctcagtgt ggttgtgaac aagcccgtgg	2760
ggagatatcg ctcagcccca aaacgcctgt ccatgacgca agagaagttt gaaatgggct	2820
ggaaagcatg gggaaaaagc attototttg coccggaatt ggotaactoc acatttgttg	2880
tagatggacc tgagacaaag gaatgtcctg atgagcacag agcctggaac agcatgcaaa	2940
tcgaagactt cggctttggt atcacatcaa cccgtgtgtg gctgaagatt agagaggaaa	3000
gcactgacga gtgtgatgga gcgatcatag gcacagctgt caaaggacat gtggcagttc	3060
atagtgactt gtcgtactgg attgagagtc gctacaacga cacatggaaa cttgagaggg	3120
cagtetttgg agaggteaaa tettgeaett ggeeagagae acacactett tggggagatg	3180
gtgttgagga aagtgaactc atcatcccgc ataccatagc cggaccaaaa agcaagcaca	3240
atcggaggga agggtacaaa acacaaaacc agggaccttg ggacgaaaac ggcatagtc	t 3300
tggactttga ttattgccca gggacaaaag tcaccatcac agaggattgt ggcaagagag	3360

gcccttcggt cagaaccact actgacagtg gaaagttgat tactgactgg tgctgtcgca	3420
gttgctccct tccgccccta cgattccgga cagaaaatgg ctgctggtac ggaatggaaa	3480
tcagacctgt taggcatgat gaaacaacac tcgtcagatc acaggttgat gctttcaatg	3540
gtgaaatggt tgaccctttt cagctgggcc ttctggtgat gtttctggcc acccaggagg	3600
teettegeaa gaggtggaeg geeagattga ceatteetge ggttttgggg geeetgettg	3660
tgctgatgct tgggggcatc acttacactg atttggcgag gtatgtggtg ctagtcgctg	3720
ctgctttcgc agaggccaat aatggaggag acgtcctgca ccttgctttg attgccgttt	3780
ttaagatcca accagctttt ctagtgatga acatgcttag cacgagatgg acgaaccaag	3840
aaaacgtggt cctggtccta ggggctgcct tctttcaatt ggcctcagta gatctgcaaa	3900
teggagteca eggaateetg aatgeegeeg etatageatg gatgattgtt egagegatea	3960
cettecceae aaceteetee gteaceatge eagtettage gettetaaet eegggaatga	4020
gggctctata cctagacact tacagaatca tccttctcgt catagggatt tgctccctgc	4080
tgcaagagag gaaaaagacc atggcaaaaa agaaaggagc tgtactcttg ggcttagcgc	4140
tcacatccac tggatggttc tcgcccacca ccatagctgc tggactaatg gtctgcaacc	4200
caaacaagaa gagagggtgg ccagctactg agtttctgtc ggcagtcgga ttgatgtttg	4260
ccatcgtagg tggtttggcc gagttggata ttgaatccat gtcaataccc ttcatgctgg	4320
caggtettat ggcagtgtee taegtagtgt caggaaaage aacagatatg tggetegaac	4380
gggccgccga catcagctgg gagatggatg ctgcaatcac aggaagcagt cggaggctgg	4440

4500 atgtgaaact ggatgatgac ggagattttc acttgattga tgatcccggc gttccatgga 4560 aagtttgggt cttgcgcatg tcttgcattg gcttagccgc cctcacgcct tgggccattg 4620 ttcccgccgc tttcggttac tggctcactt taaaaacaac aaaaagaggg ggcgtgtttt 4680 gggacacgcc atccccgaaa ccttgcttaa aaggagacac cactacagga gtctaccgaa 4740 tcatggctag agggattctt ggcacctacc aggctggcgt cggagtcatg tacgagaatg 4800 ttttccacac actatggcac acaactagag gggcagccat tatgagtgga gaaggaaaat tgacgccata ctggggtagc gtgaaagaag accgcatagc ttacggaggc ccatggagat 4860 4920 ttgatcgaaa atggaatgga acagatgacg tgcaagtgat cgtggtagaa ccggggaagg 4980 ctgcggtaaa catccagaca aaaccaggag tgtttcggac ccccttcggg gaggttgggg 5040 ctgttagcct ggattacccg cgaggaacat ccggctcacc cattctggat tccaatggag 5100 acatcatagg cctatacggc aatggagttg agcttggcga tggctcatac gtcagcgcca 5160 tcgtgcaggg tgaccgtcag gaggaaccag tcccagaagc ttacactcca aacatgttaa 5220 gaaagagaca gatgactgtg ttagatttgc accctggttc agggaaaacc aggaaaattc 5280 tgccacaaat aattaaggat gcaatccagc agcgcctaag aacagctgtg ttggcaccga 5340 cgcgggtggt agcagcagaa atggcagaag ctttgagagg gctcccagta cgataccaaa 5400 cttcagcagt gcagagagag caccaaggga atgaaatagt ggatgtgatg tgccacgcca 5460 ctctgaccca cagattgatg tcaccgaaca gagtgcccaa ctacaatctg tttgtcatgg 5520 atgaagetea ttteacegae eeageeagea tageegeaeg aggatacate getaceaagg

5580 tggaattagg agaggcagca gccatcttta tgacagcgac cccgcctgga accacggatc 5640 cttttcccga ctcaaatgcc ccaatccatg atttacaaga tgagatacca gacagggcat 5700 ggagcagtgg atacgaatgg atcacagaat atgcgggtaa aaccgtgtgg tttgtggcga 5760 gcgtaaaaat ggggaatgag attgcaatgt gcctccaaag agcgggaaaa aaggtcatcc 5820 aactcaaccg caagtcctat gacacagaat acccaaaatg taagaatgga gactgggatt 5880 ttgtcattac caccgacatc tctgaaatgg gggctaactt cggtgcgagc agggtcatcg actgcagaaa gagcgtgaaa cccaccatct tagaagaggg agaaggcaga gtcatcctcg 5940 gaaacccatc tcccataacc agtgctagcg cagctcaacg gaggggcaga gtaggcagaa 6000 accccaacca agttggagat gaataccatt atggaggggc taccagtgaa gatgacagta 6060 6120 acctagccca ttggacagag gcaaagatca tgttagacaa catacacatg cccaatgggc tggtggccca gctctatgga ccagagaggg aaaaggcttt cacaatggat ggcgaatacc 6180 6240 gtctcagggg tgaagaaaag aaaaacttct tagagctgct taggacggct gaccttccgg 6300 tgtggctggc ctataaggtg gcgtccaatg gcattcagta caccgacaga aagtggtgtt 6360 ttgatgggcc gcgcacgaat gccatactgg aggacaacac cgaggtagag atagtcaccc 6420 ggatgggtga gagaaagatc ctcaagccga gatggcttga tgcaagagta tacgcagatc 6480 accaagccct caagtggttc aaagactttg cagcaggaaa gagatcggcc gttagcttca 6540 tagaggtgct cggtcgcatg cctgagcatt tcatgggaaa gacgcgggaa gctttagaca 6600 ccatgtactt ggtcgcaacg gctgagaaag gtgggaaggc acaccgaatg gctctcgaag

agttgccgga tgcactggaa accatcacac ttattgttgc catcactgta atgacaggag	6660
gattcttcct actaatgatg cagcgaaagg gtatagggaa gatgggtctt ggagctctag	6720
tgctcacgct agctaccttc ttcctgtggg cggcagaggt tcctggaacc aaaatagcag	6780
ggaccetget gategeeetg etgetgatgg tggtteteat eecagaaceg gaaaaacaga	6840
ggtcacagac agacaaccaa ctagcggtgt ttctcatctg cgtcttgacc gtggttggag	6900
tggtggcagc aaacgagtac gggatgctag aaaaaaccaa agcagatctc aagagcatg	t 6960
ttggcggaaa gacacaggca tcaggactga ctggattgcc aagcatggca ctggacctgc	7020
gtccagccac agcctgggca ctgtatgggg ggagcacagt tgtgctaacc cctcttctga	7080
agcacctgat cacgtcggaa tatgtcacca catcgctagc ctcaattaac tcacaagctg	7140
anticattatt catettacea caaggeatge ettteacega tetagaeetg accottogee	7000
gctcattatt cgtcttgcca cgaggcgtgc ctttcaccga tctagacctg accgttggcc	7200
tcgtcttcct tggctgctgg ggtcaaatca ccctcacaac gtttttgaca gccatggttc	7260
tegtetteet tggetgetgg ggteaaatea eecteacaae gtttttgaca gecatggtte	7260
tcgtcttcct tggctgctgg ggtcaaatca ccctcacaac gtttttgaca gccatggttc tggcgacact tcactatggg tacatgctcc ctggatggca agcagaagca ctcagggctg	7260 7320
tcgtcttcct tggctgctgg ggtcaaatca ccctcacaac gtttttgaca gccatggttc tggcgacact tcactatggg tacatgctcc ctggatggca agcagaagca ctcagggctg cccagagaag gacggcggct ggaataatga agaatgccgt tgttgacgga atggtcgcca	7260 7320 7380
tcgtcttcct tggctgctgg ggtcaaatca ccctcacaac gtttttgaca gccatggttc tggcgacact tcactatggg tacatgctcc ctggatggca agcagaagca ctcagggctg cccagagaag gacggcggct ggaataatga agaatgccgt tgttgacgga atggtcgcca ctgatgtgcc tgaactggaa aggactactc ctctgatgca aaagaaagtc ggacaggtgc	7260 7320 7380 7440
tegtetteet tggetgetgg ggteaaatea eecteacaac gtttttgaca gecatggtte tggegacact teactatggg tacatgetee etggatggea ageagaagea eteagggetg eecagagaag gaeggegget ggaataatga agaatgeegt tgttgaegga atggtegeea etgatgtgee tgaactggaa aggaetaete etetgatgea aaagaaagte ggaeaggtge teeteatagg ggtgagegtg geagegttte tegteaacee taatgteace actgtgagag	7260 7320 7380 7440 7500

7740 ggcctggggg caggacgcta ggggagcagt ggaaggaaaa actaaatgcc atgagcagag 7800 aagagttttt taaataccgg agagaggcca taatcgaggt ggaccgcact gaagcacgca 7860 gggctagacg tgaaaataac atagtgggag gacatccggt ttcgcgaggc tcagcaaaac 7920 tccgttggct cgtggagaaa ggattcgtct cgccaatagg aaaagtcatt gatctagggt 7980 gtgggcgtgg aggatggagc tactacgcag caaccctgaa gaaggtccag gaagtcagag 8040 gatacacgaa aggtggggcg ggacatgaag agccgatgct catgcagagc tacggctgga acctggtctc cttgaagagt ggagtggatg tgttctacaa accttcagag cctagtgaca 8100 8160 ccctgttctg tgacataggg gaatcctccc caagtccaga agtggaagaa caacgcacac 8220 tacgcgtcct agagatgaca tccgattggt tgcatcgagg acccagagag ttctgcataa 8280 aagttetetg ceettacatg eecaaggtea tagaaaaaat ggaagttetg cagegeeget toggaggtgg gotagtacgt otcoccotgt cocgaaacto caatcacgag atgtattggg 8340 8400 ttagtggagc cgctggcaat gtggtgcacg ctgtgaacat gaccagccag gtactactgg 8460 ggcgaatgga tcgcacagtg tggagagggc caaagtatga ggaagatgtc aacctaggta gcggaacaag agccgtggga aagggagaag ttcatagcaa tcaggagaaa atcaagaaga 8520 8580 gaatccagaa gcttaaagaa gaattcgcca caacgtggca caaagaccct gaacacccat 8640 accgcacttg gacataccac ggaagctatg aggtgaaggc tactggctca gccagctctc 8700 tcgtcaacgg agtggtgaag ctcatgagta aaccttggga cgccattgcc aacgtcacca ccatggccat gactgacacc accccttttg gacagcaaag agttttcaag gagaaagttg 8760

8820 acacgaaagc tcctgagcca ccagctggag tcaaggaagt gctcaacgag accaccaact 8880 ggctgtgggc ccacttgtca cgggaaaaaa gaccccgctt gtgcaccaag gaagaattta 8940 taaagaaagt caatagcaac gcggctcttg gagcagtgtt tgctgaacag aatcaatgga 9000 gcacggcgcg tgaggctgtg gacgacccgc ggttttggga gatggtcaat gaagagaggg aaaaccatct gcgaggagag tgtcacacat gtatctacaa catgatggga aaaagagaga 9060 9120 agaagcctgg agagtttgga aaagctaaag ggagcagggc catttggttc atgtggcttg gagcacggta tcttgagttt gaagctttgg ggttcctgaa tgaagaccac tggctgagcc 9180 9240 gagagaattc aggaggtgga gtagaaggct caggcgtcca aaagttggga tacatcctcc 9300 gtgacatagc aggaaagcaa ggagggaaaa tgtacgctga tgacaccgcc gggtgggaca 9360 ctagaattac tagaactgat ttagaaaatg aagctaaggt gctggagctc ctagatggtg 9420 aacaccgcat gctcgcccgg gccataattg aactgactta caggcacaaa gtggtcaagg 9480 tcatgagacc tgcagcagaa ggaaagaccg tgatggacgt gatatcaaga gaagaccaaa 9540 gggggagtgg acaggtggtc acttatgctc tcaacacttt cacgaacatc gctgtccagc 9600 tcgttaggct gatggaggct gagggggtca ttgggccaca acacttggaa cagctgccta 9660 ggaaaaacaa gatagctgtc aggacttggc tctttgagaa tggagaggag agagtgacca 9720 ggatggcgat cagcggagac gactgtgtcg tcaagccgct ggacgacaga ttcgccacgg 9780 ccctccattt cctcaacgca atgtcaaagg ttagaaaaga catccaggaa tggaagcctt 9840 cgcacggctg gcacgattgg cagcaagttc ccttctgctc taaccacttt caggagattg

tgatgaaaga cggaaggagt atagttgtcc cgtgcagagg acaggatgag ctgataggca 9900 gggctcgcat ctctccagga gctggatgga atgtgaagga cacagcttgc ctggcaaaag 9960 catatgcaca gatgtggcta ctcctatact tccatcgtag ggacctgcgt ctcatggcaa 10020 10080 atgcgatttg ctcagcagtg ccagtggatt gggtgcccac aggcaggaca tcctggtcaa tacactcgaa aggagagtgg atgaccacgg aagacatgct gcaggtctgg aacagagtct 10140 ggattgaaga aaatgaatgg atgatggata agactcccgt cacaagctgg acagacgttc 10200 cgtatgtggg aaagcgtgag gacatctggt gtggcagcct catcggaacg cgttccagag 10260 caacctgggc tgagaacatc tatgcggcga taaaccaggt tagagctgtc attgggaaag 10320 aaaattatgt tgactacatg acctcactca ggagatacga agacgtcttg atccaggaag 10380 10440 acagggtcat ctagtgtgac ttaaggtaga aatgtaaata atgtgaatga gaaaatgcat gtatatggag tcaggccagc aaaagctgcc accggatact gggtagacgg tgctgcctgc 10500 10560 gtctcagtcc caggaggact gggttaacaa atctgacaac agaaagtgag aaagccctca 10620 gaaccgtctc ggaagtaggt ccctgctcac tggaagttga aagaccaacg tcaggccacg 10680 aatttgtgcc actccgctgg ggagtgcggc ctgcgcagcc ccaggaggac tgggttacca 10740 aagccgttga ggcccccacg gcccaagcct cgtctaggat gcaatagacg aggtgtaagg 10800 actagaggtt agaggagacc ccgtggaaac aacaacatgc ggcccaagcc ccctcgaagc tgtagaggag gtggaaggac tagaggttag aggagacccc gcatttgcat caaacagcat 10860 10920 attgacacct gggaatagac tgggagatct tctgctctat ctcaacatca gctactaggc

10980 acagagegee gaagtatgta getggtggtg aggaagaaca caggatetet agageggeeg 11040 cggaccgact agcctctttt cggccttcgc tgagagggat ttgttcccta ggcctaatta 11100 ttatttttaa ttgcccaata cgtatacgag tgccttttct aattctcgta tactatagtg 11160 agtogtatta totagoogoo ogggoogtog accaattoto atgtttgaca gottatoato gaatttctgc cattcatccg cttattatca cttattcagg cgtagcaacc aggcgtttaa 11220 11280 gggcaccaat aactgcctta aaaaaattac gccccgccct gccactcatc gcagtactgt tgtaattcat taagcattct gccgacatgg aagccatcac aaacggcatg atgaacctga 11340 11400 atcgccagcg gcatcagcac cttgtcgcct tgcgtataat atttgcccat ggtgaaaacg ggggcgaaga agttgtccat attggccacg tttaaatcaa aactggtgaa actcacccag 11460 11520 ggattggctg agacgaaaaa catattctca ataaaccctt tagggaaata ggccaggttt 11580 tcaccgtaac acgccacatc ttgcgaatat atgtgtagaa actgccggaa atcgtcgtgg 11640 tattcactcc agagcgatga aaacgtttca gtttgctcat ggaaaacggt gtaacaaggg 11700 tgaacactat cccatatcac cagctcaccg tctttcattg ccatacggaa ttccggatga 11760 gcattcatca ggcgggcaag aatgtgaata aaggccggat aaaacttgtg cttatttttc 11820 tttacggtct ttaaaaaggc cgtaatatcc agctgaacgg tctggttata ggtacattga 11880 gcaactgact gaaatgcctc aaaatgttct ttacgatgcc attgggatat atcaacggtg 11940 gtatatccag tgatttttt ctccatttta gcttccttag ctcctgaaaa tctcgataac 12000 tcaaaaaata cgcccggtag tgatcttatt tcattatggt gaaagttgga acctcttacg

12060 tgccgatcaa cgtctcattt tcgccaaaag ttggcccagg gcttcccggt atcaacaggg 12120 acaccaggat ttatttattc tgcgaagtga tcttccgtca caggtattta ttcgcgataa 12180 gctcatggag cggcgtaacc gtcgcacagg aaggacagag aaagcgcgga tctgggaagt 12240 gacggacaga acggtcagga cctggattgg ggaggcggtt gccgccgctg ctgctgacgg tgtgacgttc tctgttccgg tcacaccaca tacgttccgc cattcctatg cgatgcacat 12300 12360 gctgtatgcc ggtataccgc tgaaagttct gcaaagcctg atgggacata agtccatcag ttcaacggaa gtctacacga aggtttttgc gctggatgtg gctgcccggc accgggtgca 12420 12480 gtttgcgatg ccggagtctg atgcggttgc gatgctgaaa caattatcct gagaataaat 12540 gccttggcct ttatatggaa atgtggaact gagtggatat gctgtttttg tctgttaaac agagaagctg gctgttatcc actgagaagc gaacgaaaca gtcgggaaaa tctcccatta 12600 12660 tcgtagagat ccgcattatt aatctcagga gcctgtgtag cgtttatagg aagtagtgtt 12720 ctgtcatgat gcctgcaagc ggtaacgaaa acgatttgaa tatgccttca ggaacaatag 12780 aaatcttcgt gcggtgttac gttgaagtgg agcggattat gtcagcaatg gacagaacaa 12840 cctaatgaac acagaaccat gatgtggtct gtccttttac agccagtagt gctcgccgca 12900 gtcgagcgac agggcgaagc cctcgagtga gcgaggaagc accagggaac agcacttata 12960 tattctgctt acacacgatg cctgaaaaaa cttcccttgg ggttatccac ttatccacgg 13020 ggatattttt ataattattt tttttatagt ttttagatct tcttttttag agcgccttgt 13080

aggcctttat ccatgctggt tctagagaag gtgttgtgac aaattgccct ttcagtgtga

caaatcaccc tcaaatgaca gtcctgtctg tgacaaattg cccttaaccc tgtgacaaat 13140 13200 tgccctcaga agaagctgtt ttttcacaaa gttatccctg cttattgact cttttttatt 13260 tagtgtgaca atctaaaaac ttgtcacact tcacatggat ctgtcatggc ggaaacagcg gttatcaatc acaagaaacg taaaaatagc ccgcgaatcg tccagtcaaa cgacctcact 13320 13380 gaggcggcat atagtetete eegggateaa aaacgtatge tgtatetgtt egttgaceag 13440 atcagaaaat ctgatggcac cctacaggaa catgacggta tctgcgagat ccatgttgct 13500 aaatatgctg aaatattcgg attgacctct gcggaagcca gtaaggatat acggcaggca 13560 ttgaagagtt tcgcggggaa ggaagtggtt ttttatcgcc ctgaagagga tgccggcgat 13620 gaaaaaggct atgaatcttt tccttggttt atcaaacgtg cgcacagtcc atccagaggg 13680 ctttacagtg tacatatcaa cccatatctc attcccttct ttatcgggtt acagaaccgg 13740 tttacgcagt ttcggcttag tgaaacaaaa gaaatcacca atccgtatgc catgcgttta 13800 tacgaatccc tgtgtcagta tcgtaagccg gatggctcag gcatcgtctc tctgaaaatc 13860 gactggatca tagagcgtta ccagctgcct caaagttacc agcgtatgcc tgacttccgc 13920 cgccgcttcc tgcaggtctg tgttaatgag atcaacagca gaactccaat gcgcctctca 13980 tacattgaga aaaagaaagg ccgccagacg actcatatcg tattttcctt ccgcgatatc acttccatga cgacaggata gtctgagggt tatctgtcac agatttgagg gtggttcgtc 14040 14100 acatttgttc tgacctactg agggtaattt gtcacagttt tgctgtttcc ttcagcctgc 14160 atggattttc tcatactttt tgaactgtaa tttttaagga agccaaattt gagggcagtt

14220 tgtcacagtt gatttccttc tctttccctt cgtcatgtga cctgatatcg ggggttagtt 14280 cgtcatcatt gatgagggtt gattatcaca gtttattact ctgaattggc tatccgcgtg 14340 tgtacctcta cctggagttt ttcccacggt ggatatttct tcttgcgctg agcgtaagag 14400 ctatctgaca gaacagttct tctttgcttc ctcgccagtt cgctcgctat gctcggttac 14460 acggctgcgg cgagcgctag tgataataag tgactgaggt atgtgctctt cttatctcct 14520 tttgtagtgt tgctcttatt ttaaacaact ttgcggtttt ttgatgactt tgcgattttg ttgttgcttt gcagtaaatt gcaagattta ataaaaaaac gcaaagcaat gattaaagga 14580 14640 tgttcagaat gaaactcatg gaaacactta accagtgcat aaacgctggt catgaaatga 14700 cgaaggctat cgccattgca cagtttaatg atgacagccc ggaagcgagg aaaataaccc 14760 ggcgctggag aataggtgaa gcagcggatt tagttggggt ttcttctcag gctatcagag 14820 atgccgagaa agcagggcga ctaccgcacc cggatatgga aattcgagga cgggttgagc 14880 aacgtgttgg ttatacaatt gaacaaatta atcatatgcg tgatgtgttt ggtacgcgat 14940 tgcgacgtgc tgaagacgta tttccaccgg tgatcggggt tgctgcccat aaaggtggcg 15000 tttacaaaac ctcagtttct gttcatcttg ctcaggatct ggctctgaag gggctacgtg 15060 ttttgctcgt ggaaggtaac gacccccagg gaacagcctc aatgtatcac ggatgggtac 15120 cagatettea tatteatgea gaagacaete teetgeettt etatettggg gaaaaggaeg 15180 atgtcactta tgcaataaag cccacttgct ggccggggct tgacattatt ccttcctgtc 15240 tggctctgca ccgtattgaa actgagttaa tgggcaaatt tgatgaaggt aaactgccca

15300 ccgatccaca cctgatgctc cgactggcca ttgaaactgt tgctcatgac tatgatgtca 15360 tagttattga cagcgcgcct aacctgggta tcggcacgat taatgtcgta tgtgctgctg 15420 atgtgctgat tgttcccacg cctgctgagt tgtttgacta cacctccgca ctgcagtttt 15480 tcgatatgct tcgtgatctg ctcaagaacg ttgatcttaa agggttcgag cctgatgtac 15540 gtattttgct taccaaatac agcaatagta atggctctca gtccccgtgg atggaggagc 15600 aaattcggga tgcctgggga agcatggttc taaaaaatgt tgtacgtgaa acggatgaag ttggtaaagg tcagatccgg atgagaactg tttttgaaca ggccattgat caacgctctt 15660 15720 caactggtgc ctggagaaat gctctttcta tttgggaacc tgtctgcaat gaaattttcg atcgtctgat taaaccacgc tgggagatta gataatgaag cgtgcgcctg ttattccaaa 15780 15840 acatacgctc aatactcaac cggttgaaga tacttcgtta tcgacaccag ctgccccgat ggtggattcg ttaattgcgc gcgtaggagt aatggctcgc ggtaatgcca ttactttgcc 15900 15960 tgtatgtggt cgggatgtga agtttactct tgaagtgctc cggggtgata gtgttgagaa 16020 gacctctcgg gtatggtcag gtaatgaacg tgaccaggag ctgcttactg aggacgcact 16080 ggatgatete atecettett ttetaetgae tggteaacag acaeeggegt teggtegaag 16140 agtatctggt gtcatagaaa ttgccgatgg gagtcgccgt cgtaaagctg ctgcacttac 16200 cgaaagtgat tatcgtgttc tggttggcga gctggatgat gagcagatgg ctgcattatc 16260 cagattgggt aacgattatc gcccaacaag tgcttatgaa cgtggtcagc gttatgcaag 16320 ccgattgcag aatgaatttg ctggaaatat ttctgcgctg gctgatgcgg aaaatatttc

16380 acgtaagatt attacccgct gtatcaacac cgccaaattg cctaaatcag ttgttgctct 16440 tttttctcac cccggtgaac tatctgcccg gtcaggtgat gcacttcaaa aagcctttac 16500 agataaagag gaattactta agcagcaggc atctaacctt catgagcaga aaaaagctgg 16560 ggtgatattt gaagctgaag aagttatcac tcttttaact tctgtgctta aaacgtcatc 16620 tgcatcaaga actagtttaa gctcacgaca tcagtttgct cctggagcga cagtattgta taagggcgat aaaatggtgc ttaacctgga caggtctcgt gttccaactg agtgtataga 16680 16740 gaaaattgag gccattctta aggaacttga aaagccagca ccctgatgcg accacgtttt 16800 agtctacgtt tatctgtctt tacttaatgt cctttgttac aggccagaaa gcataactgg 16860 cctgaatatt ctctctgggc ccactgttcc acttgtatcg tcggtctgat aatcagactg 16920 ggaccacggt cccactcgta tcgtcggtct gattattagt ctgggaccac ggtcccactc 16980 gtatcgtcgg tctgattatt agtctgggac cacggtccca ctcgtatcgt cggtctgata 17040 atcagactgg gaccacggtc ccactcgtat cgtcggtctg attattagtc tgggaccatg 17100 gtcccactcg tatcgtcggt ctgattatta gtctgggacc acggtcccac tcgtatcgtc 17160 ggtctgatta ttagtctgga accacggtcc cactcgtatc gtcggtctga ttattagtct 17220 gggaccacgg tcccactcgt atcgtcggtc tgattattag tctgggacca cgatcccact 17280 cgtgttgtcg gtctgattat cggtctggga ccacggtccc acttgtattg tcgatcagac 17340 tatcagcgtg agactacgat tccatcaatg cctgtcaagg gcaagtattg acatgtcgtc 17400 gtaacctgta gaacggagta acctcggtgt gcggttgtat gcctgctgtg gattgctgct

17460 gtgtcctgct tatccacaac attttgcgca cggttatgtg gacaaaatac ctggttaccc 17520 aggccgtgcc ggcacgttaa ccgggctgca tccgatgcaa gtgtgtcgct gtcgacgagc 17580 tcgcgagctc ggacatgagg ttgccccgta ttcagtgtcg ctgatttgta ttgtctgaag 17640 ttgtttttac gttaagttga tgcagatcaa ttaatacgat acctgcgtca taattgatta tttgacgtgg tttgatggcc tccacgcacg ttgtgatatg tagatgataa tcattatcac 17700 tttacgggtc ctttccggtg atccgacagg ttacggggcg gcgacctcgc gggttttcgc 17760 17820 tatttatgaa aattttccgg tttaaggcgt ttccgttctt cttcgtcata acttaatgtt 17880 tttatttaaa ataccctctg aaaagaaagg aaacgacagg tgctgaaagc gagctttttg 17940 gcctctgtcg tttcctttct ctgtttttgt ccgtggaatg aacaatggaa gtccgagctc atcgctaata acttcgtata gcatacatta tacgaagtta tattcgatgc ggcgctgagg 18000 18060 tctgcctcgt gaagaaggtg ttgctgactc ataccaggcc tgaatcgccc catcatccag 18120 ccagaaagtg agggagccac ggttgatgag agctttgttg taggtggacc agttggtgat 18180 18240 cttcaactca gcaaaagttc gatttattca acaaagccac gtgtctcaaa atctctgatg 18300 ttacattgca caagataaaa atatatcatc atgaacaata aaactgtctg cttacataaa 18360 cagtaataca aggggtgtta tgagccatat tcaacgggaa acgtcttgct cgacgatgat 18420 aagctgtcaa acatgagaat tgggtcgtca atatgctaaa acgcggcata ccccgcgtat 18480 tcccactagt taatcgtacg aattccgtat ggcaatgaaa gacggtgagc tggtgatatg

ggatagtgtt caccettgtt acacegtttt ccatgagcaa actgaaacgt tttcatcgct	18540
ctggagtgaa taccacgacg atttccggca gtttctacac atatattcgc aagatgtggc	18600
gtgttacggt gaaaacctgg cctatttccc taaagggttt attgagaata tgtttttcgt	18660
ctcagccaat ccctgggtga gtttcaccag ttttgattta aacgtggcca atatggacaa	18720
cttcttcgcc cccgttttca ccatgggcaa atattatacg caaggcgaca aggtgctgat	18780
gccgctggcg attcaggttc atcatgccgt ttgtgatggc ttccatgtcg gcagaatgct	18840
taatgaatta caacagtact gcgatgagtg gcagggcggg gcgtaatttt tttaaggcag	18900
ttattggtgc ccttaaacgc ctggttgcta cgcctgaata agtgataata agcggatgaa	18960
tggcagaaat tcgatgataa gctgtcaaac atgagaattg gtcgacggcc cgggcggcta	19020
gataatacga ctcactatag	19040

<210> 49

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> primer EGFPF

<400> 49

tcgccaccat ggtgagca 18

<210> 50

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> primer EGFPR

<400> 50

cataggcctc tattaaccgt cgactgcaga 30

<210> 51

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> primer PACF

<400> 51

gatcacgttg tgagttggat agttgtg 27

<210> 52

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> primer PACR

<400> 52

atcatgcatt catggggtcg tgcgctc 27

```
<210> 53
<211> 27
<212> DNA
<213> Artificial Sequence
<220>
```

<223> primer DelF

<400> 53

gatttaatta acctgcaggg ggctgtt

<210> 54 <211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> primer C1R

<400> 54

gatctcgagc cggtttttac cgggccc 27

27

<210> 55

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> primer C2F

<400> 55

gatctcgaga aaagaggagg aaatgaa

27

<210> 56

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> primer DelR

<400> 56

tgtggccaag aaggccaaag caattga

27

<210> 57

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> primer C3R

<400> 57

gatctcgagc attactaccc tcttcac

27

<210> 58

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> primer prM1R <400> 58 27 gatctcgagg tccgtgttgt taatggt <210> 59 <211> 27 <212> DNA <213> Artificial Sequence <220> <223> primer prM2F <400> 59 27 gatctcgagg attcaacgaa agccaca <210> 60 <211> 27 <212> DNA <213> Artificial Sequence <220> <223> primer E1R <400> 60 27 gatctcgagg gctccactgg ctccttc

<210>

<211>

<212>

61

27

DNA

<213> **Artificial Sequence** <220> <223> primer E2F <400> 61 gatctcgaga caactttgaa gggagct 27 <210> 62 <211> 30 <212> DNA <213> **Artificial Sequence** <220> <223> primer NS1R <400> 62 30 ggcacatcca gtgtcggctc ctacacaagc <210> 63 <211> 18 <212> DNA <213> **Artificial Sequence** <220> <223> primer NS1F

<400>

63

gacactggat gtgccatt

18

<210> 64

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> primer RR

<400> 64

tcgtcccgca cggcttccca c 21

<210> 65

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> primer JEVCF

<400> 65

gattctagaa tgactaaaaa acca 24

<210> 66

<211> 31

<212> DNA

<213> Artificial Sequence

<220>

<223> primer JEVER

<400> 66



gatgtttaaa ctattaagca tgcacattgg t

31

31

<21	0>	67

<211> 31

<212> DNA

<213> Artificial Sequence

<220>

<223> primer JEVNS1R

<400> 67

gatgtttaaa ctattaagca tcaacctgtg a

